# THE NEWS LETTER
# OF THE
# BUREAU OF PUBLIC ROADS

VOL. 3, NO. 9 JULY, 1928 A. C. ROSE, EDITOR

CONTENTS

# COMPTROLLER GENERAL RULES ON DEDUCTIONS MADE TO FOREST ROAD CONTRACTORS FOR SURPLUS WAR STOCK

Contributed by the Legal Section

(Not for release)

Under the date of March 26, 1928, the General Accounting Office, in issuing the certificate of settlement (No. 7312-A) on the contract of Dayley and Adams for constructing the Warm River - Yellowstone forest road project, State of Idaho, transferred to the credit of Miscellaneous Receipts $14,272.89, being the sums deducted for Government equipment and explosives used under the contract. This was the first instance in which the General Accounting Office actually transferred deductions of this character to Miscellaneous Receipts, although the question had been up several times and we had successfully avoided any such transfer up to the above date.

A review of this settlement by the Comptroller General was requested in a letter prepared in the Bureau and signed by the Acting Secretary on May 31, 1928. In this letter the argument was advanced that equipment and explosives obtained by transfer from the War Department as surplus war stocks were appropriated by Congress the same as the money appropriations for road work, and that, therefore, deductions for the value of that used by contractors do not represent money receipts on behalf of the United States, as contemplated by Sections 3617 and 3618 of the Revised Statutes, which require that all money received on behalf of the United States shall be covered into the Treasury to the credit of Miscellaneous Receipts. In an opinion dated June 29, 1928, the Comptroller General agreed with the contention made in the Department's request for review and advised that the sum of $14,272.89 transferred in the settlement of March 26, 1928, would be restored to the appropriation "Forest Roads and Trails."

This decision of the Comptroller General should dispose of this question and we should encounter no further difficulty with the General Accounting Office concerning it. However it relates only to deductions for surplus war equipment and explosives transferred to this Department by the War Department, and would not apply to equipment or explosives purchased or otherwise acquired by the Department and furnished to contractors.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

# STATUS OF CURRENT FEDERAL-AID ROAD WORK

## FOR THE FISCAL YEAR ENDING JUNE 30, 1928

AS OF JUNE 30, 1928

| STATES | BALANCE OF FEDERAL-AID FUND AVAILABLE FOR NEW PROJECTS | *UNDER CONSTRUCTION | | | APPROVED FOR CONSTRUCTION | | | AMOUNT PAID STATES DURING FISCAL YEAR | COMPLETED AND PAID DURING FISCAL YEAR | | | AGREEMENTS NOW IN FORCE | | | P. S. & E. RECOMMENDED FOR APPROVAL BY DISTRICT ENGINEER | | | STATES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FEDERAL AID | MILEAGE | | FEDERAL AID | MILEAGE | | | FEDERAL AID | MILEAGE | | FEDERAL AID | MILEAGE | | FEDERAL AID | MILEAGE | | |
| | | | ORIGINAL | STAGE | | ORIGINAL | STAGE | | | ORIGINAL | STAGE | | ORIGINAL | STAGE | | ORIGINAL | STAGE | |
| Alabama | $ 1,645,844.61 | $ 3,622,312.93 | 427.9 | 57.6 | $ 356,972.83 | 48.7 | 12.4 | $ 2,759,966.85 | $ 2,001,927.49 | 249.4 | | $ 3,651,299.83 | 404.4 | 57.6 | $ 529,985.93 | 72.2 | 12.4 | Alabama |
| Arizona | 2,896,024.65 | 1,664,282.55 | 120.9 | 4.6 | 42,024.80 | | 4.2 | 422,436.01 | 463,822.73 | 16.1 | | 1,847,848.61 | 120.3 | 4.9 | 56,466.74 | 0.6 | 4.2 | Arizona |
| Arkansas | 1,765,771.75 | 2,567,862.63 | 250.4 | | 102,444.55 | 9.6 | 6.2 | 798,612.86 | 203,213.42 | 37.8 | | 2,320,744.20 | 224.2 | | 349,562.88 | 46.1 | 6.2 | Arkansas |
| California | 3,363,012.39 | 3,092,617.14 | 129.1 | 8.2 | 703,031.15 | 43.7 | | 2,444,944.39 | 2,916,678.50 | 149.1 | 0.4 | 2,829,821.96 | 121.6 | 8.2 | 966,026.31 | 51.0 | | California |
| Colorado | 2,573,202.04 | 3,191,550.36 | 237.3 | 9.2 | 159,230.93 | 12.7 | 14.5 | 1,371,068.74 | 1,227,460.74 | 111.6 | 3.2 | 2,463,556.16 | 192.5 | 9.1 | 887,226.13 | 57.5 | 14.5 | Colorado |
| Connecticut | 566,752.61 | 1,423,716.44 | 62.7 | | 66,951.17 | 3.6 | | 415,289.33 | 779,158.24 | 41.0 | | 1,490,667.51 | 88.3 | | | | | Connecticut |
| Delaware | 190,680.44 | 95,739.75 | 5.7 | 3.6 | 155,295.60 | 12.9 | | 396,176.60 | 416,019.59 | 40.0 | | 183,677.80 | 13.7 | 3.6 | 67,157.75 | 4.9 | | Delaware |
| Florida | 1,210,489.75 | 2,126,051.21 | 123.6 | 5.4 | 333,505.44 | 30.7 | | 1,261,265.61 | 2,585,757.00 | 122.2 | 24.7 | 2,191,826.65 | 136.3 | 5.4 | 269,730.00 | 16.0 | | Florida |
| Georgia | 17,567.82 | 2,059,699.42 | 203.2 | 34.7 | 1,239,573.27 | 102.3 | 50.1 | 2,260,205.94 | 3,973,104.09 | 279.4 | 147.0 | 2,156,490.55 | 203.2 | 44.7 | 1,142,782.14 | 102.3 | 40.1 | Georgia |
| Idaho | 138,890.41 | 1,240,688.93 | 116.5 | 56.6 | 653,836.57 | 101.6 | 1.6 | 936,021.66 | 1,316,836.83 | 168.7 | 34.1 | 1,075,230.61 | 100.9 | 55.2 | 819,294.69 | 117.2 | 3.4 | Idaho |
| Illinois | 114,597.22 | 10,222,480.66 | 694.6 | | 1,942,068.60 | 148.0 | | 3,021,486.88 | 1,061,188.92 | 80.1 | | 6,349,068.85 | 561.9 | | 3,615,490.41 | 280.7 | | Illinois |
| Indiana | 267,083.14 | 6,079,753.50 | 393.3 | 3.5 | 807,135.04 | 61.3 | | 2,767,823.43 | 3,660,050.12 | 252.0 | | 5,664,573.44 | 369.5 | 3.5 | 1,222,315.10 | 85.1 | | Indiana |
| Iowa | 171,307.77 | 3,236,735.15 | 184.7 | 148.5 | 776,011.52 | 10.2 | 71.4 | 3,507,729.88 | 4,684,194.61 | 467.3 | 129.4 | 3,857,088.48 | 174.9 | 208.3 | 157,660.21 | | 11.6 | Iowa |
| Kansas | 1,294,552.84 | 4,069,108.36 | 526.6 | 0.4 | 598,232.45 | 106.3 | | 3,071,637.66 | 2,892,415.67 | 424.0 | 17.6 | 3,893,225.33 | 499.6 | 0.4 | 794,115.48 | 133.1 | | Kansas |
| Kentucky | 529,296.09 | 3,345,890.85 | 286.8 | 16.6 | 579,848.00 | 62.7 | | 2,214,946.66 | 2,086,055.31 | 214.6 | 62.6 | 3,077,805.16 | 270.3 | 16.5 | 847,933.69 | 79.2 | | Kentucky |
| Louisiana | 317,573.20 | 2,410,268.07 | 203.6 | | 239,803.83 | 6.6 | | 956,664.41 | 1,243,460.69 | 66.7 | 7.5 | 2,316,011.76 | 189.4 | | 332,060.14 | 23.0 | | Louisiana |
| Maine | 1,380,996.50 | 654,174.71 | 49.0 | | 200,682.36 | 14.2 | | 469,684.26 | 732,746.76 | 61.7 | | 886,022.84 | 54.0 | | 168,834.43 | 9.2 | | Maine |
| Maryland | 143,816.23 | 353,730.00 | 30.0 | | 416,900.00 | 38.6 | 7.2 | 555,946.88 | 755,697.50 | 79.6 | | 327,100.00 | 30.6 | | 443,530.00 | 37.6 | 7.2 | Maryland |
| Massachusetts | 2,151,416.10 | 1,948,131.48 | 116.5 | | 84,345.00 | 5.6 | | 676,611.29 | 676,611.29 | 43.7 | | 1,865,151.14 | 114.7 | | 167,325.32 | 9.4 | | Massachusetts |
| Michigan | 627,344.95 | 6,044,285.60 | 354.3 | | 526,665.00 | 29.4 | 6.5 | 2,326,490.95 | 3,240,651.26 | 227.3 | 12.6 | 4,767,554.23 | 292.1 | | 1,782,616.57 | 91.6 | 6.5 | Michigan |
| Minnesota | 398,471.43 | 2,088,100.00 | 306.9 | 54.7 | 291,000.00 | 49.6 | 20.6 | 1,986,835.11 | 2,001,398.90 | 248.7 | 110.3 | 2,299,100.00 | 339.9 | 75.3 | 60,000.00 | 15.8 | | Minnesota |
| Mississippi | 892,222.08 | 2,539,736.04 | 256.7 | 47.1 | 100,459.53 | 11.5 | 0.6 | 1,836,906.75 | 2,206,913.73 | 220.0 | 19.6 | 2,282,178.51 | 236.6 | 40.5 | 358,017.06 | 33.4 | 7.2 | Mississippi |
| Missouri | 1,550,936.55 | 3,095,824.74 | 216.5 | 49.6 | 602,716.59 | 48.3 | 13.7 | 2,656,532.46 | 2,665,446.84 | 217.6 | 30.5 | 3,171,108.11 | 225.7 | 54.2 | 527,435.22 | 40.1 | 7.9 | Missouri |
| Montana | 4,353,968.31 | 2,846,948.68 | 333.3 | 4.1 | 1,308,589.16 | 235.1 | 10.7 | 1,778,896.60 | 732,145.14 | 94.6 | 9.2 | 4,106,067.47 | 566.4 | 11.9 | 49,450.39 | 2.0 | 2.9 | Montana |
| Nebraska | 1,999,143.13 | 4,724,807.70 | 920.0 | 388.2 | 37,768.83 | | 23.2 | 2,653,649.67 | 3,304,247.95 | 717.7 | 491.0 | 4,740,926.65 | 919.2 | 412.4 | 21,647.68 | 0.8 | | Nebraska |
| Nevada | 595,556.69 | 1,535,202.67 | 203.7 | 71.3 | 51,419.56 | | 23.7 | 937,054.96 | 830,371.98 | 126.9 | 10.7 | 1,549,183.14 | 203.7 | 79.1 | 37,439.31 | | 15.9 | Nevada |
| New Hampshire | 65,727.25 | 434,267.54 | 28.6 | | 190,235.78 | 9.2 | | 371,194.25 | 431,583.38 | 31.2 | | 526,913.32 | 31.3 | | 97,590.00 | 6.5 | | New Hampshire |
| New Jersey | 253,177.00 | 1,269,076.52 | 86.3 | | | | | 1,319,535.00 | 1,319,535.00 | 88.0 | | 806,401.52 | 54.5 | | 462,675.00 | 30.6 | | New Jersey |
| New Mexico | 894,613.28 | 3,141,341.55 | 290.5 | | 492,343.74 | 56.1 | 0.5 | 1,417,762.65 | 882,413.37 | 99.9 | | 2,706,342.27 | 226.2 | 0.5 | 927,343.02 | 116.4 | | New Mexico |
| New York | 3,910,462.61 | 7,903,681.45 | 500.5 | | 1,806,847.50 | 116.9 | 6.6 | 5,061,107.41 | 5,995,343.59 | 385.6 | | 9,045,728.95 | 573.0 | 6.6 | 664,800.00 | 44.4 | | New York |
| North Carolina | 1,141,531.23 | 1,383,210.24 | 96.2 | 19.6 | 259,500.00 | 5.0 | 19.5 | 1,589,297.53 | 1,843,327.37 | 134.4 | 27.6 | 1,083,411.36 | 70.6 | 19.6 | 559,298.86 | 29.4 | 19.5 | North Carolina |
| North Dakota | 837,992.37 | 2,124,216.55 | 734.0 | 221.0 | 502,502.23 | 192.4 | 121.7 | 1,409,404.82 | 2,126,042.17 | 497.4 | 385.4 | 2,396,617.22 | 844.0 | 310.2 | 226,104.56 | 82.4 | 32.5 | North Dakota |
| Ohio | 2,591,001.85 | 4,865,556.13 | 304.0 | 6.0 | 1,340,636.28 | 88.6 | 6.7 | 2,183,363.28 | 3,123,398.00 | 243.3 | 4.2 | 4,690,931.13 | 305.1 | 6.0 | 1,515,261.26 | 67.5 | 6.7 | Ohio |
| Oklahoma | 387,602.49 | 2,706,376.55 | 349.5 | 19.2 | 837,938.01 | 109.7 | 15.5 | 1,616,263.19 | 1,609,237.74 | 150.6 | 30.3 | 2,212,486.84 | 334.6 | 12.6 | 1,333,627.72 | 123.6 | 21.9 | Oklahoma |
| Oregon | 1,267,096.47 | 1,012,120.57 | 51.4 | 9.2 | 146,673.72 | 6.7 | | 656,487.98 | 783,910.30 | 39.1 | 32.6 | 980,015.17 | 55.6 | 9.2 | 176,779.12 | 2.5 | | Oregon |
| Pennsylvania | 1,850,129.27 | 4,956,793.75 | 299.7 | | 1,316,026.22 | 82.4 | | 3,031,621.22 | 3,565,732.44 | 243.9 | 3.0 | 5,677,212.93 | 344.6 | | 597,607.04 | 37.5 | | Pennsylvania |
| Rhode Island | 576,046.16 | 431,049.92 | 26.6 | | 80,919.55 | 4.0 | | 316,606.03 | 312,324.31 | 20.2 | | 511,969.47 | 30.6 | | | | | Rhode Island |
| South Carolina | 84,396.43 | 2,806,803.01 | 288.6 | 161.6 | 69,700.00 | 10.4 | 6.1 | 1,256,902.48 | 1,846,156.75 | 101.3 | 16.9 | 2,369,003.01 | 260.4 | 136.3 | 289,500.00 | 36.6 | 31.4 | South Carolina |
| South Dakota | 514,514.16 | 2,260,197.05 | 688.2 | 136.0 | 350,684.24 | 107.0 | 39.2 | 1,187,023.73 | 977,914.01 | 300.5 | 126.5 | 2,533,549.03 | 762.1 | 136.0 | 77,332.26 | 13.1 | 39.2 | South Dakota |
| Tennessee | 254,777.15 | 3,742,215.06 | 249.6 | 23.6 | 1,368,324.58 | 25.6 | 94.3 | 1,157,624.72 | 1,590,594.84 | 96.3 | 36.5 | 2,753,784.10 | 193.0 | 23.6 | 2,356,755.56 | 82.2 | 94.3 | Tennessee |
| Texas | 3,975,496.70 | 5,729,274.07 | 400.1 | 220.1 | 2,627,106.00 | 161.9 | 168.0 | 4,367,659.10 | 5,707,467.76 | 449.7 | 212.2 | 5,525,635.93 | 463.6 | 246.9 | 2,830,746.14 | 96.4 | 129.2 | Texas |
| Utah | 220,748.76 | 1,740,470.96 | 140.5 | 12.3 | 240,095.90 | 19.4 | 1.5 | 1,290,052.52 | 1,545,381.40 | 161.5 | 7.5 | 1,372,642.42 | 124.2 | 7.0 | 607,924.44 | 35.7 | 6.6 | Utah |
| Vermont | 25,473.61 | 584,976.39 | 51.2 | | 147,464.36 | 11.9 | | 694,117.53 | 692,894.43 | 48.7 | | 683,942.33 | 54.5 | | 68,490.42 | 6.6 | | Vermont |
| Virginia | 237,853.61 | 1,653,338.57 | 129.4 | 25.5 | 156,605.91 | 31.6 | | 1,439,060.06 | 1,596,834.66 | 89.4 | | 1,536,987.27 | 130.0 | 17.7 | 472,957.21 | 31.0 | 7.8 | Virginia |
| Washington | 491,643.46 | 1,547,600.00 | 124.3 | 16.1 | 440,238.89 | 21.2 | 5.0 | 521,599.31 | 1,704,301.70 | 65.6 | | 1,355,600.00 | 115.8 | 16.1 | 632,236.69 | 29.7 | 5.0 | Washington |
| West Virginia | 476,768.16 | 1,927,126.55 | 171.0 | 4.0 | 294,283.84 | 25.3 | | 1,043,717.00 | 1,666,016.44 | 122.3 | 6.0 | 1,846,460.36 | 184.3 | 4.0 | 374,950.03 | 32.0 | | West Virginia |
| Wisconsin | 1,436,440.62 | 4,083,362.06 | 346.3 | 35.9 | 433,988.43 | 36.5 | 15.7 | 2,959,014.72 | 3,372,831.77 | 273.7 | 25.4 | 2,620,639.76 | 252.3 | 16.6 | 1,696,710.75 | 130.5 | 33.0 | Wisconsin |
| Wyoming | 167,116.50 | 1,676,948.71 | 255.3 | 78.6 | 190,064.91 | 41.6 | | 1,106,907.83 | 1,266,792.83 | 130.5 | 55.7 | 1,454,969.87 | 227.6 | 78.6 | 412,043.75 | 69.3 | | Wyoming |
| Hawaii | 1,064,241.56 | 239,100.88 | 12.3 | | 57,501.20 | 1.6 | | 325,901.59 | 373,119.33 | 20.6 | | 296,602.09 | 14.1 | | | | | Hawaii |
| TOTALS | 53,643,770.45 | 134,914,611.00 | 12,371.3 | 1956.1 | 25,741,403.26 | 2,359.3 | 759.1 | 80,802,232.55 | 93,317,324.02 | 6,556.6 | 2066.6 | 128,275,184.78 | 12,267.3 | 2149.6 | 32,381,029.51 | 2,443.3 | 567.3 | TOTALS |

* Includes projects reported completed (final vouchers not yet paid) totaling: Federal aid, $ 29,616,680.36 Mileage: Original 2,677.4 Stage 672.9

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

F-2 (1927)
R.S.A.

## TOTAL DISBURSEMENTS, 1927.

FOR STATE ROAD AND BRIDGE WORK UNDER SUPERVISION OF THE STATE HIGHWAY DEPARTMENTS
INCLUDING STATE BOND PAYMENTS, DURING FISCAL YEARS OF - 1927.

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

| STATES | FISCAL YEAR ENDS | TOTAL DISBURSEMENTS DURING YEAR (100%) | CONSTRUCTION & RECONSTRUCTION ON ROADS & BRIDGES | % OF TOTAL DISB-M'TS | MAINTENANCE ON ROADS & BRIDGES | % OF TOTAL DISB-M'TS | MISCELLANEOUS EXPENSES | % OF TOTAL DISB-M'TS | BONDS, NOTES, ETC- PAID ON PRINCIPAL | % OF TOTAL DISB-M'TS | BONDS, NOTES, ETC- PAID ON INTEREST | % OF TOTAL DISB-M'TS | EQUIPMENT, MACHINERY & MATERIALS | % OF TOTAL DISB-M'TS | A-COUNTY FUNDS B-RIGHT-OF-WAY C-TRAFFIC, ETC- | % OF TOTAL DISB-M'TS | UNEXPENDED BALANCE AT THE END OF YEAR | STATES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | 9/30 | $ 10,765,580 | $ 6,659,591 | 63.7 | $ 810,504 | 7.5 | $ 831,059 | 7.7 | $ 651,893 | 6.1 | $ 895,535 | 8.3 | $ 718,998 | 6.7 | - | - | $ 1,931,763 | ALABAMA |
| ARIZONA | 6/30 | 2,607,660 | 1,323,140 | 50.7 | 1,039,583 | 39.6 | 118,881 | 4.6 | - | - | - | - | 126,076 | 4.8 | - | - | -172,188 | ARIZONA |
| ARKANSAS | 12/31 | 14,531,630 | 4,411,649 | 30.4 | 1,917,037 | 13.2 | 641,098 | 4.4 | 5,372,362 | 37.0 | 317,795 | 2.2 | 552,650 | 3.8 | ABC $1,316,039 | 9.0 | 7,632,110 | ARKANSAS |
| CALIFORNIA | 12/31 | 20,558,842 | 8,572,576 | 41.7 | 5,217,587 | 25.4 | 1,574,728 | 7.7 | 1,775,000 | 8.6 | 3,030,694 | 14.7 | 40,837 | 0.2 | B 347,416 | 1.7 | 6,988,376 | CALIFORNIA |
| COLORADO | 11/30 | 5,231,783 | 2,896,537 | 55.4 | 843,570 | 16.1 | 359,410 | 7.0 | 600,000 | 11.5 | 486,976 | 8.6 | 24,766 | 0.5 | D 30,532 | 0.6 | 1,686,716 | COLORADO |
| CONNECTICUT | 8/30 | 12,783,981 | 7,885,544 | 61.7 | 4,335,820 | 34.0 | 562,817 | 4.3 | - | - | - | - | - | - | - | - | 10,214,033 | CONNECTICUT |
| DELAWARE | 12/31 | 3,478,548 | 1,982,267 | 57.0 | 148,050 | 4.2 | 484,471 | 13.9 | 283,250 | 7.8 | 437,420 | 12.6 | 11,088 | 0.3 | BC 153,013 | 4.4 | 251,760 | DELAWARE |
| FLORIDA | 12/31 | 23,557,342 | 19,707,153 | 83.7 | 2,576,809 | 11.0 | 1,257,857 | 5.3 | - | - | - | - | 13,523 | - | - | - | 592,017 | FLORIDA |
| GEORGIA | 12/31 | 15,113,561 | 11,966,347 | 78.2 | 1,573,331 | 10.4 | 1,113,518 | 7.4 | - | - | - | - | 317,460 | 2.1 | A 142,905 | 0.9 | 250,686 | GEORGIA |
| IDAHO | 12/31 | 3,847,216 | 1,969,480 | 51.2 | 676,045 | 17.6 | 425,710 | 11.1 | 399,000 | 10.4 | 151,467 | 3.6 | 195,000 | 5.1 | ABC 29,514 | 0.7 | 711,045 | IDAHO |
| ILLINOIS | 12/31 | 30,269,902 | 16,201,716 | 53.5 | 1,942,610 | 6.4 | 2,486,617 | 8.2 | 2,000,000 | 6.8 | 3,606,010 | 11.6 | 94,716 | 0.3 | AD 938,230 | 3.1 | 6,370,661 | ILLINOIS |
| INDIANA | 6/30 | 14,798,311 | 10,188,940 | 68.6 | 2,628,585 | 17.8 | 661,431 | 4.5 | - | - | - | - | 1,124,834 | 7.6 | B 193,521 | 1.3 | 2,414,904 | INDIANA |
| IOWA | 11/30 | 24,076,785 | 15,033,540 | 62.4 | 3,567,646 | 14.8 | (1) 4,778,005 | 19.9 | - | - | - | - | - | - | B 697,504 | 2.9 | 5,446,258 | IOWA |
| KANSAS | 12/31 | 16,509,292 | 15,357,105 | 93.0 | 1,000,000 | 6.1 | 152,187 | 0.8 | - | - | - | - | - | - | - | - | - | KANSAS |
| KENTUCKY | 6/30 | 11,484,462 | 7,411,497 | 64.5 | 1,894,855 | 16.5 | 823,146 | 7.2 | - | - | - | - | 888,525 | 7.7 | AB 466,629 | 4.1 | 657,924 | KENTUCKY |
| LOUISIANA | 12/31 | 10,762,704 | 6,511,416 | 60.5 | 2,736,608 | 25.5 | 596,785 | 5.5 | 30,000 | 0.3 | 25,650 | 0.2 | 657,103 | 6.1 | D 195,140 | 1.6 | 2,274,428 | LOUISIANA |
| MAINE | 12/31 | 8,684,283 | 5,134,208 | 58.1 | 1,568,850 | 18.1 | 462,316 | 5.3 | 446,000 | 5.1 | 568,305 | 6.6 | 354,638 | 4.1 | BC 148,946 | 1.7 | 1,243,759 | MAINE |
| MARYLAND (2) | 6/30 | 10,567,544 | 3,650,836 | 34.5 | 3,952,943 | 37.3 | 295 | - | 2,002,640 | 18.9 | 990,830 | 9.3 | - | - | - | - | 1,926,750 | MARYLAND |
| MASSACHUSETTS | 11/30 | 16,378,612 | 10,803,947 | 66.0 | 2,753,600 | 16.8 | 3,575,006 | 19.4 | (3) 1,048,258 | 5.7 | (3) - | - | 198,801 | 1.1 | - | - | 659,118 | MASSACHUSETTS |
| MICHIGAN | 6/30 | 25,882,861 | 14,037,673 | 54.2 | 5,121,335 | 16.6 | 1,408,616 | 5.4 | 529,236 | 2.1 | 2,239,490 | 8.7 | 521,758 | 2.0 | A 2,024,355 | 7.8 | 3,959,553 | MICHIGAN |
| MINNESOTA | 12/31 | 17,836,557 | 10,540,144 | 56.1 | 4,233,938 | 23.7 | 143,657 | 0.8 | 189,494 | 1.1 | 1,595,811 | 8.9 | 668,120 | 8.8 | AB 465,193 | 2.6 | 8,902,898 | MINNESOTA |
| MISSISSIPPI | 1/31 | 6,461,037 | 4,072,753 | 62.8 | 1,747,501 | 27.0 | 555,262 | 8.6 | - | - | - | - | 63,004 | 1.0 | A 42,517 | 0.6 | 1,076,219 | MISSISSIPPI |
| MISSOURI | 12/31 | 25,896,475 | 15,734,340 | 60.5 | 3,233,750 | 12.4 | 1,892,360 | 7.3 | 2,995,000 | 11.5 | 2,141,025 | 8.3 | - | - | - | - | 4,842,914 | MISSOURI |
| MONTANA | 6/30 | 1,540,789 | 1,034,361 | 67.1 | 158,587 | 10.3 | 208,246 | 13.5 | - | - | - | - | 131,848 | 8.6 | A 7,749 | 0.5 | 249,593 | MONTANA |
| NEBRASKA | 12/31 | 8,004,355 | 5,143,533 | 64.2 | 1,847,964 | 23.1 | 424,486 | 5.3 | - | - | - | - | 487,457 | 6.1 | AB 100,915 | 1.3 | 1,750,731 | NEBRASKA |
| NEVADA | 11/30 | 2,199,431 | 1,478,057 | 67.2 | 331,736 | 15.1 | 203,972 | 9.3 | 100,000 | 4.5 | 30,097 | 1.4 | 41,440 | 1.9 | C 14,129 | 0.6 | -43,915 | NEVADA |
| NEW HAMPSHIRE | 12/31 | 3,564,979 | 1,410,409 | 39.6 | 1,645,113 | 46.1 | 464,199 | 13.0 | - | - | - | - | 45,258 | 1.3 | - | - | 1,319,124 | NEW HAMPSHIRE |
| NEW JERSEY | 12/31 | 27,762,871 | 15,300,342 | 55.1 | 1,759,826 | 6.4 | 1,641,900 | 5.9 | (3) 2,872,176 | 10.3 | (3) - | - | 43,037 | 0.2 | AB 6,145,591 | 22.1 | 10,136,215 | NEW JERSEY |
| NEW MEXICO | 12/31 | 5,086,904 | 2,976,850 | 58.5 | 1,002,723 | 19.7 | 213,569 | 4.2 | 444,969 | 8.7 | 27,936 | 0.6 | 416,924 | 8.2 | B 5,933 | 0.1 | -2,253 | NEW MEXICO |
| NEW YORK | 12/31 | 58,798,232 | 37,304,788 | 63.4 | 7,068,803 | 12.0 | 3,446,691 | 5.9 | 400,000 | 0.7 | 4,220,000 | 7.2 | 972,380 | 1.7 | AB 5,385,570 | 9.1 | 44,585,290 | NEW YORK |
| NORTH CAROLINA | 6/30 | 33,144,486 | 17,089,096 | 51.6 | 2,798,345 | 8.4 | 1,927,312 | 5.8 | - | - | 3,825,139 | 11.6 | 110,796 | 0.3 | A 7,393,798 | 22.3 | 20,816,364 | NORTH CAROLINA |
| NORTH DAKOTA | 6/30 | 4,567,360 | 3,435,141 | 75.2 | 428,371 | 9.4 | 510,615 | 11.2 | - | - | - | - | 170,528 | 3.7 | BC 22,705 | 0.5 | 775,348 | NORTH DAKOTA |
| OHIO | 12/31 | 18,213,619 | 3,641,484 | 20.0 | 13,841,618 | 76.0 | 730,517 | 4.0 | - | - | - | - | - | - | - | - | 15,866,250 | OHIO |
| OKLAHOMA | 12/31 | 12,616,237 | 9,744,681 | 76.0 | 2,192,798 | 17.1 | 861,113 | 5.2 | - | - | - | - | - | - | B 217,645 | 1.7 | 471,944 | OKLAHOMA |
| OREGON | 11/30 | 10,263,443 | 3,167,698 | 30.9 | 2,984,212 | 29.1 | 748,180 | 7.3 | 1,600,000 | 15.6 | 1,653,216 | 16.2 | - | - | BC 100,137 | 0.9 | 1,023,077 | OREGON |
| PENNSYLVANIA | 12/31 | 50,064,021 | (4) 17,598,482 | 35.2 | 15,043,687 | 30.0 | (5) 5,655,977 | 11.3 | 3,509,048 | 7.0 | 4,291,400 | 8.6 | 1,191,191 | 2.4 | AC 2,774,256 | 5.5 | 24,146,596 | PENNSYLVANIA |
| RHODE ISLAND | 11/30 | 4,242,096 | 1,362,705 | 32.1 | 1,868,262 | 44.1 | 449,558 | 10.6 | 117,598 | 2.8 | 186,020 | 4.4 | 155,280 | 3.6 | ABC 102,673 | 2.4 | 3,362,614 | RHODE ISLAND |
| SOUTH CAROLINA | 12/31 | 13,410,166 | 9,163,281 | 68.3 | 1,923,106 | 14.4 | 489,048 | 3.6 | - | - | - | - | 423,813 | 3.2 | AC 1,410,917 | 10.5 | 9,194,115 | SOUTH CAROLINA |
| SOUTH DAKOTA | 12/31 | 4,862,474 | 2,447,751 | 50.3 | 1,164,840 | 23.6 | 314,761 | 6.5 | 450,000 | 9.3 | 268,750 | 5.5 | 37,663 | 0.8 | AC 178,689 | 3.7 | 2,532,187 | SOUTH DAKOTA |
| TENNESSEE | 6/30 | 16,002,628 | 8,394,930 | 52.4 | 3,707,505 | 23.2 | 1,562,744 | 9.8 | 1,000,000 | 6.2 | 93,772 | 0.6 | 1,243,677 | 7.8 | - | - | -165,182 | TENNESSEE |
| TEXAS | 8/31 | 20,018,264 | 11,356,072 | 56.8 | 8,085,308 | 40.4 | 394,564 | 2.0 | - | - | - | - | 173,320 | 0.8 | - | - | 5,860,201 | TEXAS |
| UTAH | 12/31 | 3,829,203 | 2,080,105 | 52.6 | 798,086 | 20.3 | 81,430 | 2.1 | 412,600 | 10.5 | 325,000 | 8.3 | 217,503 | 5.5 | AC 16,579 | 0.4 | 569,011 | UTAH |
| VERMONT | 12/31 | 4,060,316 | 2,421,285 | 59.4 | 1,319,148 | 32.3 | 161,087 | 3.9 | - | - | - | - | 178,796 | 4.4 | - | - | 406,151 | VERMONT |
| VIRGINIA | 6/30 | 14,714,397 | 9,375,173 | 63.7 | 3,980,383 | 27.1 | 602,701 | 4.1 | - | - | - | - | 450,000 | 3.1 | AB 306,190 | 2.0 | 974,396 | VIRGINIA |
| WASHINGTON | 12/31 | 8,627,901 | 5,633,820 | 65.3 | 2,243,856 | 26.0 | 750,825 | 8.7 | - | - | - | - | - | - | - | - | - | WASHINGTON |
| WEST VIRGINIA | 12/31 | 19,311,231 | 11,645,150 | 61.9 | 2,171,978 | 11.2 | 590,820 | 3.1 | 2,320,000 | 12.0 | 2,052,482 | 10.6 | 230,801 | 1.2 | - | - | 4,523,916 | WEST VIRGINIA |
| WISCONSIN | 6/30 | 17,547,385 | 9,473,867 | 54.0 | 4,175,330 | 23.8 | 543,760 | 3.1 | - | - | - | - | 24,784 | 0.1 | A 3,329,644 | 19.0 | 4,003,440 | WISCONSIN |
| WYOMING | 12/31 | 2,873,445 | 1,796,741 | 62.5 | 721,067 | 25.1 | 188,415 | 6.6 | - | - | 94,325 | 3.3 | 72,897 | 2.5 | - | - | 394,342 | WYOMING |
| TOTALS |  | $ 699,875,182 | $ 400,038,376 | 57.2 | $ 138,783,358 | 16.6 | $ 47,881,923 | 6.8 | $ 31,528,424 | 4.5 | $ 33,545,347 | 4.8 | $ 13,390,076 | 1.9 | $ 34,707,676 | 5.0 | $ 223,007,786<br>-383,639<br>$ 222,6[illegible],[illegible]47 | TOTALS |

REMARKS: DISBURSEMENTS HERE SHOWN, IN GENERAL, COVER MONEY SPENT ON STATE HIGHWAYS.

NOTES:
(1) INCLUDES $901,788 PAID ON COUNTY ROAD BONDS FOR PRINCIPAL AND INTEREST, AND $2,386,611 ON ANTICIPATION CERTIFICATE PAYMENTS.
(2) DATA SHOWN IS FOR 1926. DATA FOR 1927 NOT AVAILABLE.
(3) PAYMENTS ON PRINCIPAL AND OF INTEREST NOT SEPARATED AND SHOWN UNDER PRINCIPAL.
(4) EXCLUDES $844,190 EXPENDED BY COUNTIES ON STATE HIGHWAYS.
(5) INCLUDES ADMINISTRATION, ENGINEERING AND REGISTRATION OF MOTOR VEHICLES.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

F-1 (1927)
R.S.A.

## TOTAL INCOME AND FUNDS AVAILABLE 1927

FOR STATE ROAD AND BRIDGE WORK UNDER SUPERVISION OF THE STATE HIGHWAY DEPARTMENTS
DURING FISCAL YEAR.

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

| STATES | FISCAL YEAR ENDS | TOTAL FUNDS AVAILABLE (100%) | BALANCE AT BEGINNING OF YEAR | % OF TOTAL FUNDS | TOTAL INCOME DURING YEAR | % OF TOTAL FUNDS | STATE HWY. BONDS, NOTES, ETC. SOLD | % OF TOTAL FUNDS | STATE TAX LEVIED FOR HIGHWAYS, ETC. | % OF TOTAL FUNDS | APPROPRIATION BY STATE FOR HIGHWAYS | % OF TOTAL FUNDS | MISCELLANEOUS STATE INCOME FOR HIGHWAYS | % OF TOTAL FUNDS | MOTOR VEHICLE FEES, ETC. FOR ROAD PURPOSES | % OF TOTAL FUNDS | GASOLINE TAX APPLICABLE TO HIGHWAYS | % OF TOTAL FUNDS | TRANSFERRED FUNDS FROM COUNTIES, ETC. | % OF TOTAL FUNDS | FEDERAL AID POST ROAD FUNDS USED | % OF TOTAL FUNDS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | 9/30 | $ 12,697,343 | $ 1,896,293 | 16.0 | $ 10,801,050 | 85.0 | $ 5,090,613 | 40.0 | - | - | - | - | $ 65,457 | 0.4 | $ 2,382,876 | 18.8 | $ 1,854,279 | 14.6 | $ 166,752 | 1.3 | $ 1,251,173 | 9.9 |
| ARIZONA | 8/30 | 2,435,471 | -138,439 | - | 2,673,910 | 100.0 | - | - | $ 645,626 | 25.1 | $ 245,000 | 9.5 | - | - | 476,876 | 18.6 | 474,264 | 18.4 | 11,000 | 0.4 | 721,244 | 28.1 |
| ARKANSAS | 12/31 | 22,163,740 | 140,448 | 0.6 | 22,023,292 | 99.4 | 13,235,625 | 69.7 | - | - | - | - | 281,254 | 1.3 | 3,662,272 | 16.6 | 4,338,736 | 19.6 | - | - | 505,405 | 2.3 |
| CALIFORNIA | 12/31 | 27,547,218 | 4,229,610 | 16.4 | 23,317,608 | 64.6 | - | - | - | - | 6,885,894 | 21.4 | - | - | 4,038,016 | 14.6 | 10,599,924 | 38.6 | 364,699 | 1.3 | 2,429,075 | 8.8 |
| COLORADO | 11/30 | 6,818,499 | 1,878,883 | 27.1 | 6,039,616 | 72.9 | - | - | 1,241,996 | 17.9 | - | - | 70,500 | 1.1 | 729,014 | 10.6 | 1,740,651 | 26.2 | 109,200 | 1.6 | 1,148,156 | 16.6 |
| CONNECTICUT | 6/30 | 22,998,014 | 8,286,610 | 36.0 | 14,712,404 | 64.0 | - | - | - | - | 3,166,500 | 13.8 | 1,207,796 | 5.3 | 6,837,686 | 29.7 | 2,886,648 | 12.5 | - | - | 613,876 | 2.7 |
| DELAWARE | 12/31 | 3,731,309 | 606,361 | 18.3 | 3,124,948 | 83.7 | 773,037 | 20.7 | - | - | - | - | 62,964 | 1.7 | 846,210 | 22.7 | 632,394 | 16.9 | 299,482 | 8.0 | 510,861 | 13.7 |
| FLORIDA | 12/31 | 24,149,359 | 4,677,049 | 19.4 | 19,472,310 | 80.6 | - | - | 148,839 | 0.6 | - | - | 457,903 | 1.9 | 4,523,634 | 18.7 | 8,243,691 | 34.1 | 4,409,841 | 18.3 | 1,688,402 | 7.0 |
| GEORGIA | 12/31 | 16,364,247 | 1,266,317 | 8.2 | 14,097,930 | 91.8 | - | - | - | - | - | - | 34,623 | 0.3 | 3,699,794 | 23.4 | 4,993,111 | 32.4 | 2,724,652 | 17.8 | 2,745,750 | 17.9 |
| IDAHO | 12/31 | 4,558,261 | 736,178 | 16.2 | 3,822,083 | 83.8 | - | - | 332,225 | 7.3 | 16,000 | 0.3 | 41,436 | 0.9 | 193,310 | 4.2 | 1,669,057 | 36.6 | 503,860 | 11.1 | 1,067,196 | 23.4 |
| ILLINOIS | 12/31 | 36,640,563 | 1,710,922 | 4.7 | 34,929,641 | 96.3 | 12,176,086 | 33.2 | - | - | 15,544 | - | 197,685 | 0.6 | 16,689,366 | 42.6 | 3,953,048 | 10.8 | - | - | 2,997,913 | 8.2 |
| INDIANA | 9/30 | 17,213,216 | 2,920,951 | 17.0 | 14,292,264 | 83.0 | - | - | - | - | - | - | 358,445 | 2.1 | 6,147,181 | 29.9 | 6,461,275 | 37.6 | 249,809 | 1.4 | 2,075,554 | 12.1 |
| IOWA | 11/30 | 29,523,053 | 8,020,726 | 20.4 | 23,502,327 | 79.6 | 492,188 | 1.7 | - | - | - | - | 1,106 | - | 9,271,812 | 31.4 | 2,866,066 | 9.7 | 8,298,226 | 28.1 | 2,572,940 | 8.7 |
| KANSAS | 12/31 | 16,509,292 | 377,248 | 2.3 | 16,132,044 | 97.7 | - | - | - | - | 150,000 | 0.9 | - | - | 3,934,480 | 23.8 | 3,850,720 | 23.3 | 4,730,591 | 28.7 | 3,466,253 | 21.0 |
| KENTUCKY | 6/30 | 12,142,376 | -2,321,690 | - | 14,464,066 | 100.0 | - | - | 877,181 | 6.0 | - | - | 465,112 | 3.2 | 4,204,836 | 29.1 | 5,282,931 | 36.5 | 2,223,976 | 16.4 | 1,420,030 | 9.8 |
| LOUISIANA | 12/31 | 13,027,130 | 663,216 | 4.3 | 12,463,914 | 96.7 | 2,033,833 | 16.6 | - | - | - | - | 83,097 | 0.7 | 4,128,527 | 31.6 | 2,979,618 | 22.9 | 2,166,169 | 16.6 | 1,072,770 | 8.3 |
| MAINE | 12/31 | 9,928,022 | 1,616,722 | 16.3 | 8,411,300 | 64.7 | 506,330 | 5.1 | 724,938 | 7.3 | 348,565 | 3.5 | 1,287,730 | 13.0 | 2,678,161 | 27.0 | 1,897,965 | 19.1 | 335,447 | 3.4 | 632,174 | 6.3 |
| MARYLAND (1) | 9/30 | 12,624,294 | 1,723,471 | 13.7 | 10,800,823 | 88.3 | 1,863,633 | 14.9 | 2,921,836 | 23.3 | - | - | 329,601 | 2.6 | 2,205,913 | 17.6 | 1,687,282 | 13.6 | 1,072,205 | 8.6 | 720,453 | 5.8 |
| MASSACHUSETTS | 11/30 | 19,048,731 | 724,537 | 3.8 | 18,324,194 | 96.2 | 1,149,570 | 6.0 | 1,132,228 | 6.9 | - | - | 42,123 | 0.2 | 12,458,438 | 65.4 | - | - | 2,658,130 | 14.0 | 883,704 | 4.7 |
| MICHIGAN | 6/30 | 29,842,414 | 3,816,405 | 12.8 | 26,027,009 | 87.2 | - | - | - | - | - | - | 903,017 | 3.0 | 10,403,825 | 34.9 | 10,618,424 | 35.6 | 1,437,686 | 4.8 | 2,664,057 | 8.9 |
| MINNESOTA | 12/31 | 26,738,465 | 6,828,808 | 26.6 | 19,910,647 | 74.6 | - | - | 1,936,196 | 7.3 | - | - | - | - | 10,222,090 | 38.2 | 5,035,794 | 18.8 | 660,203 | 2.5 | 2,056,364 | 7.7 |
| MISSISSIPPI | 1/31 | 7,660,256 | 1,990,641 | 26.4 | 5,669,715 | 73.6 | - | - | - | - | - | - | 103,354 | 1.4 | 207,535 | 2.7 | 2,269,619 | 30.0 | 1,044,098 | 13.8 | 1,945,109 | 25.7 |
| MISSOURI | 12/31 | 30,839,389 | 7,081,418 | 22.9 | 23,777,971 | 77.1 | 6,167,200 | 16.7 | - | - | - | - | 606,338 | 2.0 | 8,193,278 | 26.6 | 6,353,032 | 20.6 | - | - | 3,468,123 | 11.2 |
| MONTANA | 6/30 | 1,790,382 | 106,581 | 6.0 | 1,683,801 | 94.0 | - | - | - | - | - | - | 54,863 | 3.1 | - | - | 630,885 | 29.6 | 203,273 | 11.3 | 894,780 | 50.0 |
| NEBRASKA | 12/31 | 9,766,086 | 2,400,155 | 24.6 | 7,354,931 | 76.4 | - | - | - | - | 100,000 | 1.0 | - | - | 1,088,571 | 11.2 | 3,656,906 | 37.6 | 84,939 | 0.9 | 2,424,615 | 24.8 |
| NEVADA | 11/30 | 2,155,516 | -66,798 | - | 2,222,314 | 100.0 | 100,000 | 4.5 | 42,291 | 1.9 | - | - | 143,249 | 6.5 | 229,839 | 10.3 | 233,501 | 10.5 | 477,889 | 21.5 | 995,545 | 44.8 |
| NEW HAMPSHIRE | 12/31 | 4,884,103 | 1,130,040 | 23.1 | 3,754,063 | 78.9 | - | - | - | - | - | - | 201,892 | 4.2 | 1,839,680 | 37.6 | 1,268,661 | 26.8 | - | - | 453,830 | 9.3 |
| NEW JERSEY | 12/31 | 37,899,085 | 7,977,827 | 21.0 | 29,921,259 | 78.0 | 9,000,000 | 23.8 | 5,817,654 | 15.4 | - | - | 17,170 | - | 10,199,525 | 26.9 | 3,378,653 | 8.9 | 436,682 | 1.2 | 1,071,675 | 2.8 |
| NEW MEXICO | 12/31 | 6,086,651 | 4,921 | 0.1 | 5,081,730 | 99.9 | 1,225,315 | 24.1 | 334,866 | 6.6 | 229,344 | 4.5 | 43,042 | 0.9 | 228,733 | 4.6 | 1,170,969 | 23.0 | 66,140 | 1.3 | 1,782,321 | 35.0 |
| NEW YORK | 12/31 | 103,383,522 | 49,961,171 | 48.3 | 63,422,351 | 51.7 | 3,875,000 | 3.6 | - | - | 18,770,176 | 19.1 | 197,693 | 0.2 | 18,000,000 | 17.4 | - | - | 8,132,316 | 7.9 | 3,647,166 | 3.5 |
| NORTH CAROLINA | 6/30 | 53,960,840 | 17,109,798 | 31.7 | 36,861,042 | 68.3 | 20,000,000 | 37.0 | - | - | - | - | 1,123,472 | 2.1 | 6,893,610 | 10.9 | 8,120,604 | 16.1 | - | - | 1,713,356 | 3.2 |
| NORTH DAKOTA | 8/30 | 6,342,708 | 799,161 | 15.0 | 4,543,557 | 85.0 | - | - | - | - | - | - | 85,068 | 1.6 | 977,177 | 18.3 | 928,988 | 17.4 | 2,630 | - | 2,549,694 | 47.7 |
| OHIO | 12/31 | 34,079,869 | 2,738,470 | 8.0 | 31,341,399 | 92.0 | - | - | - | - | 142,884 | 0.4 | - | - | 25,190,654 | 74.0 | 3,639,967 | 10.8 | - | - | 2,367,894 | 7.0 |
| OKLAHOMA | 12/31 | 13,288,181 | (2) 1,534,241 | 11.6 | 11,753,940 | 88.6 | - | - | - | - | - | - | 67,246 | 0.5 | 2,550,000 | 19.2 | 4,798,000 | 36.1 | 3,132,137 | 23.6 | 1,206,557 | 9.1 |
| OREGON | 11/30 | 11,286,520 | 870,408 | 7.7 | 10,416,112 | 92.3 | - | - | - | - | - | - | 178,256 | 1.6 | 4,620,000 | 40.9 | 3,887,666 | 34.5 | 618,679 | 5.6 | 1,111,522 | 9.8 |
| PENNSYLVANIA | 12/31 | 74,210,617 | 24,981,699 | 33.7 | 49,228,818 | 66.3 | - | - | - | - | 23,878 | - | 296,817 | 0.4 | 27,745,481 | 37.4 | 11,821,094 | 16.9 | 6,772,177 | 7.8 | 3,569,471 | 4.8 |
| RHODE ISLAND | 11/30 | 7,604,710 | 652,330 | 8.6 | 6,952,380 | 91.4 | 3,500,000 | 46.0 | 187,164 | 2.6 | - | - | - | - | 2,095,673 | 27.6 | 729,967 | 9.6 | - | - | 429,576 | 5.6 |
| SOUTH CAROLINA | 12/31 | 22,604,281 | 252,923 | 1.1 | 22,351,358 | 98.9 | - | - | - | - | - | - | 236,086 | 1.1 | 2,132,494 | 9.4 | 3,019,399 | 13.4 | 16,839,867 | 70.0 | 1,123,512 | 5.0 |
| SOUTH DAKDTA | 12/31 | 7,394,661 | (3) 1,337,417 | 18.1 | 6,057,244 | 81.9 | - | - | 174,296 | 2.4 | 300,000 | 4.1 | 1,483,034 | 20.0 | 1,291,465 | 17.5 | 2,074,669 | 28.0 | 16,272 | 0.2 | 717,508 | 9.7 |
| TENNESSEE | 6/30 | 16,837,446 | 933,201 | 6.9 | 14,904,246 | 94.1 | 2,500,000 | 16.8 | 38,014 | 0.2 | - | - | 14,026 | - | 3,640,279 | 23.0 | 3,625,750 | 22.9 | 3,273,691 | 20.7 | 1,812,485 | 11.5 |
| TEXAS | 8/31 | 25,878,465 | 365,821 | 1.4 | 25,612,644 | 98.6 | - | - | - | - | - | - | 96,811 | 0.4 | 11,169,714 | 43.2 | 7,463,797 | 28.8 | 1,817,316 | 7.0 | 4,965,006 | 19.2 |
| UTAH | 12/31 | 4,498,214 | 628,343 | 14.0 | 3,869,871 | 86.0 | - | - | 29,028 | 0.6 | - | - | 202,920 | 4.5 | 631,000 | 14.0 | 1,305,500 | 29.0 | 552,734 | 12.3 | 1,148,689 | 25.6 |
| VERMONT | 12/31 | 4,486,467 | 250,000 | 6.6 | 4,236,467 | 94.4 | - | - | 142,930 | 3.2 | 335,425 | 7.5 | 158,354 | 3.5 | 1,759,331 | 39.2 | 906,244 | 20.2 | 233,658 | 5.2 | 701,625 | 15.6 |
| VIRGINIA | 6/30 | 16,688,793 | 1,220,501 | 7.8 | 14,468,182 | 92.2 | - | - | 1,938,029 | 12.4 | 66,435 | 0.4 | 271,078 | 1.7 | 6,124,130 | 32.7 | 3,910,097 | 24.9 | 1,289,527 | 8.2 | 1,868,896 | 11.9 |
| WASHINGTON | 12/31 | 8,827,901 | - | - | 8,627,901 | 100.0 | - | - | - | - | - | - | - | - | 3,899,648 | 45.2 | 3,799,498 | 44.0 | 229,636 | 2.7 | 699,119 | 8.1 |
| WEST VIRGINIA | 12/31 | 23,836,147 | 6,604,714 | 27.7 | 17,230,433 | 72.3 | 8,500,000 | 35.7 | - | - | - | - | 55,996 | 0.2 | 3,732,310 | 15.7 | 3,676,372 | 15.4 | 4,203 | - | 1,261,552 | 5.3 |
| WISCONSIN | 6/30 | 21,650,825 | 4,360,934 | 20.2 | 17,189,891 | 78.8 | - | - | - | - | - | - | 116,379 | 0.6 | 9,344,217 | 43.4 | 4,437,929 | 20.6 | 934,297 | 4.3 | 2,357,069 | 11.0 |
| WYOMING | 12/31 | 3,287,787 | 49,638 | 1.5 | 3,218,149 | 98.6 | - | - | 94,325 | 2.9 | - | - | 846,613 | 25.9 | 636,236 | 16.4 | 766,049 | 23.1 | 55,200 | 1.7 | 929,726 | 28.6 |
| TOTALS | | $ 922,499,429 | $ 186,241,098<br>-2,526,927<br>$ 182,714,171 | 19.8 | $ 739,786,258 | 80.2 | $ 90,979,230 | 9.9 | $18,769,581 | 2.0 | $ 30,794,645 | 3.3 | $ 12,469,703 | 1.4 | $ 259,854,786 | 28.2 | $169,818,473 | 18.4 | $ 76,639,189 | 8.3 | $ 80,459,671 | 8.7 |

REMARKS: ABOVE FUNDS GENERALLY APPLICABLE TO STATE HIGHWAY FINANCING.

NOTES:
(1) 1926 FIGURES USED.
(2) EXCLUDES $983,488 OF COUNTY FUNDS PREVIOUSLY REPORTED IN 1926 DISBURSEMENT TABLE AS UNEXPENDED BALANCE.
(3) INCLUDES $600,498 OMITTED AS UNEXPENDED BALANCE IN 1926.

# COMPREHENSIVE CONCRETE PAVEMENT CURING TESTS NOW IN PROGRESS IN TENNESSEE

Contributed by F. H. Jackson of the Division of Tests
(Not for release)

The most comprehensive series of concrete pavement curing tests, that have been carried out up to the present time, are now being initiated in connection with the construction of about 17 miles of concrete pavement on Tennessee Federal-aid project 18-A, between Memphis and Somerville. It is believed that every curing method that has received serious consideration will be included in the program. About 1 mile of the pavement is now completed and it is expected that the remainder will be finished this year.

The design of the pavement was modified from the State standard 8-6-8 cross-section to 8-7-8 so as to eliminate all tie bars across the center joint which would restrict the expansion or contraction of one side of the slab with respect to the other and so effect the results of the test. The pavement consists of plain concrete, 18 feet wide, with a metal center strip from which the 3/4-inch pins to the subgrade are removed as soon as possible after the pavement is laid. The earth shoulder on each side of the pavement is 4 feet wide.

The general scheme of the test is to cure one side of the pavement continuously with the State standard method, consisting of wet burlap for 24 hours followed by 2 inches of earth kept wet for 10 days. For comparison with the standard curing, the other side of the pavement will consist of a series of sections approximately 1,000 feet long, each cured in a different manner.

Twenty-four beams will be cast for each 1,000 lineal feet of pavement, 12 on the experimental side and 12 on the standard side. These beams will be tested at the ages of 3, 7, 14, and 28 days. Cores drilled from locations corresponding with the beams will be tested at the end of 30 days. The beams will be cured in the same manner as the pavement. The sides of the beams will be protected with Sisalcraft paper against which earth will be banked.

A detailed description of the various curing methods follows:

| Number of section | One side of pavement | Other side of pavement | |
|---|---|---|---|
| 1 | Burlap, 24 hours, no further curing. Concrete laid on the bare subgrade. | Standard curing | |
| 2 | Burlap, 48 hours, no further curing. Concrete laid on the bare subgrade. | Do | do |
| 3 | Burlap, 72 hours, no further curing. Concrete laid on the bare subgrade. | Do | do |
| 4 | Burlap, 96 hours, no further curing. Concrete laid on the bare subgrade. | Do | do |
| 5 | No curing whatever. Concrete laid on the bare subgrade. | Do | do |
| 6 | Sisalcraft, 24 hours, no further curing. Concrete laid on the bare subgrade. | Do | do |
| 7 | Sodium silicate as a surface application. Concrete laid on the bare subgrade. | Do | do |
| 8 | Asphalt emulsion as a surface application. Concrete laid on the bare subgrade. | Do | do |
| 9 | Calcium chloride as a surface application; 2 pounds per square yard. Concrete laid on the bare subgrade. | Do | do |
| 10 | Calcium chloride admixture; 2½ pounds per square yard, across the full width of the pavement. Concrete laid on the bare subgrade. | | |

| Number of Section | One side of pavement | Other side of pavement |
|---|---|---|
| 11 | Calcium chloride as a surface application; 2 pounds per square yard. Concrete laid on the bare subgrade. | Standard curing |
| 12 | Tar - both cold and hot - as a surface application. Concrete laid on the bare subgrade. | Do do |
| 13 | Hunt process as a surface application. Concrete laid on the bare subgrade. | Do do |
| 14 | Hunt process as a surface application. Concrete laid on a subgrade covered with tar paper. | Do do |
| 15 | Tar - both cold and hot - as a surface application. Concrete laid on a subgrade covered with tar paper. | Do do |
| 16 | Calcium chloride as a surface application; 2 pounds per square yard. Concrete laid on a subgrade covered with tar paper. | Do do |
| 17 | Calcium chloride admixture; 2½ pounds per square yard, across the full width of the pavement. Concrete laid on a subgrade covered with tar paper. | |
| 18 | Calcium chloride as a surface application; 2 pounds per square yard. Concrete laid on a subgrade covered with tar paper. | Standard curing |
| 19 | Asphalt emulsion as a surface application. Concrete laid on a subgrade covered with tar paper. | Do do |

| Number of section | One side of pavement | Other side of pavement |
|---|---|---|
| 20 | Sodium silicate as a surface application. Concrete laid on a subgrade covered with tar paper. | Standard curing |
| 21 | Earth to simulate inferior workmanship, where the earth is only partially wetted. | Do do |
| 22 | Ponded surface. Concrete laid on the bare subgrade. | Do do |

The numbers of the sections given above do not correspond with any numbers identifying the sections in the field but are given only to facilitate this description of the test. These first 22 sections will be followed by another group of 22 of exactly the same kind and in the same order, and the pavement will be further continued by third and fourth groups of 22 identical sections. There will thus be available for comparison 4 corresponding sections of each method of testing and it is hoped by this means to obtain results which will eliminate the other variables which necessarily enter into the construction operations.

United States Department of Agriculture
Bureau of Public Roads

M-5(1926)
R.S.A.

# MILEAGE OF EXISTING LOCAL RURAL ROADS, 1925

Local Roads Include County and Township Roads, State Highway Mileage Excluded

(From records and reports of county authorities)

Data were secured from county records and may be compared with similar data for 1921. Data for intervening years contain some estimates and are not as accurate as to detail as for 1921 and 1925.

| STATES | TOTAL MILEAGE LOCAL RURAL ROADS | EARTH ROADS, NON-SURFACED | | | SURFACED LOCAL ROADS, BY TYPES | | | | | | | | | | | | STATES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | TOTAL NON-SURFACED LOCAL MILEAGE | UNIMPROVED AND PARTLY GRADED | IMPROVED TO ESTAB. GRADE AND DRAINED | TOTAL SURFACED MILEAGE LOCAL | SAND-CLAY AND TOP-SOIL | TREATED AND UNTREATED | | BITUMINOUS MACADAM BY PENETRATION | SHEET ASPHALT | BITUMINOUS CONCRETE | PORTLAND CEMENT CONCRETE | BLOCK PAVEMENTS | | | | |
| | | | | | | | GRAVEL, CHERT, ETC. | WATERBOUND MACADAM | | | | | VITRIFIED BRICK | ASPHALT | WOOD | STONE | |
| ALABAMA | 59,315 | 43,973 | 30,217 | 13,756 | 15,342 | 8,286 | 5,689 | 276 | 38 | 5 | 17 | 27 | 6 | | | | ALABAMA |
| ARIZONA | 19,505 | 17,856 | 13,952 | 3,904 | 1,649 | 209 | 1,077 | 25 | | | 68 | 270 | | | | | ARIZONA |
| ARKANSAS | 65,939 | 64,111 | 38,405 | 26,706 | 1,828 | 210 | 1,559 | 46 | 7 | 1 | | 6 | | | | | ARKANSAS |
| CALIFORNIA | 76,020 | 67,493 | 27,808 | 29,885 | 17,627 | 2,250 | 9,609 | 1,326 | 1,458 | 25 | 944 | 1,916 | | | | | CALIFORNIA |
| COLORADO | 56,639 | 54,141 | 50,343 | 3,798 | 2,498 | 1,402 | 1,073 | | | | 1 | 22 | | | | | COLORADO |
| CONNECTICUT | 12,020 | 10,518 | 8,837 | 1,681 | 1,502 | | 971 | 377 | 69 | 5 | | 79 | | | | | CONNECTICUT |
| DELAWARE | 3,206 | 2,912 | 2,071 | 841 | 294 | | 75 | 160 | 21 | | 30 | 7 | 1 | | | | DELAWARE |
| FLORIDA | 23,281 | 13,603 | 9,821 | 3,782 | 9,678 | 3,290 | 809 | 4,163 | 140 | 598 | 67 | 88 | 235 | 297 | | | FLORIDA |
| GEORGIA | 91,131 | 82,379 | 76,178 | 7,203 | 8,752 | 5,999 | 1,277 | 84 | 185 | 27 | 1 | 177 | 2 | | | | GEORGIA |
| IDAHO | 28,318 | 23,795 | 12,894 | 10,901 | 4,523 | 888 | 3,540 | 48 | 29 | | 18 | | | | | | IDAHO |
| ILLINOIS | 88,160 | 76,728 | 55,712 | 9,018 | 12,432 | | 10,695 | 429 | 75 | 22 | | 1,093 | 117 | | | | ILLINOIS |
| INDIANA | 69,348 | 24,064 | 23,677 | 387 | 45,285 | | 41,511 | 2,216 | 275 | 14 | 172 | 946 | 161 | | | | INDIANA |
| IOWA | 96,461 | 90,647 | 89,653 | 994 | 5,814 | | 5,812 | | | | | 2 | | | | | IOWA |
| KANSAS | 121,216 | 120,045 | 114,928 | 5,117 | 1,170 | 366 | 668 | 66 | 26 | 6 | 1 | 35 | 2 | | | | KANSAS |
| KENTUCKY | 51,614 | 40,570 | 37,064 | 3,506 | 11,044 | 155 | 3,955 | 5,859 | 48 | 2 | 5 | 20 | | | | | KENTUCKY |
| LOUISIANA | 27,411 | 23,421 | 10,198 | 13,223 | 3,990 | 38 | 3,918 | 16 | 5 | | 3 | 10 | | | | | LOUISIANA |
| MAINE | 19,428 | 15,305 | 16,296 | 9 | 3,123 | 9 | 3,083 | 13 | 14 | | | 3 | | | | 1 | MAINE |
| MARYLAND | 12,212 | 9,992 | 7,641 | 2,361 | 2,220 | 115 | 1,197 | 802 | 27 | 1 | | 78 | | | | | MARYLAND |
| MASSACHUSETTS | 17,533 | 10,804 | 620 | 10,184 | 6,729 | 8 | 4,224 | 980 | 1,047 | 4 | 392 | 67 | 5 | | 2 | 10 | MASSACHUSETTS |
| MICHIGAN | 74,253 | 58,784 | 58,450 | 334 | 15,469 | 19 | 13,112 | 1,236 | 118 | 8 | 64 | 910 | 6 | | | | MICHIGAN |
| MINNESOTA | 103,292 | 79,636 | 24,479 | 66,156 | 23,657 | 6,447 | 18,025 | 67 | | 11 | 18 | 88 | | | | | MINNESOTA |
| MISSISSIPPI | 49,903 | 42,465 | 39,[illegible] | 2,628 | 7,447 | 200 | 7,003 | 32 | 50 | 7 | 71 | 79 | 5 | | | | MISSISSIPPI |
| MISSOURI | 102,728 | 95,059 | 58,043 | 37,016 | 7,867 | 1,463 | 4,825 | 1,189 | 87 | | 51 | 52 | | | | | MISSOURI |
| MONTANA | 69,030 | 57,449 | 36,781 | 21,668 | 1,581 | 119 | 1,456 | 2 | 3 | | | 1 | | | | | MONTANA |
| NEBRASKA | 87,736 | 87,227 | 82,706 | 4,521 | 509 | 71 | 401 | 4 | | | 8 | 22 | 2 | | | | NEBRASKA |
| NEVADA | 20,717 | 20,287 | 18,577 | 1,710 | 430 | 179 | 250 | 1 | | | | | | | | | NEVADA |
| NEW HAMPSHIRE | 9,687 | 9,432 | 7,941 | 1,491 | 256 | 27 | 194 | 23 | 10 | | 1 | | | | | | NEW HAMPSHIRE |
| NEW JERSEY | 16,207 | 8,668 | 456 | 8,212 | 6,539 | 74 | 3,486 | 1,099 | 375 | 357 | 495 | 590 | 5 | 6 | | 51 | NEW JERSEY |
| NEW MEXICO | 38,814 | 38,546 | 37,818 | 729 | 269 | 86 | 183 | | | | | | | | | | NEW MEXICO |
| NEW YORK | 65,449 | 48,346 | 47,767 | 589 | 17,103 | 528 | 7,331 | 4,317 | 4,146 | 53 | 1 | 703 | 1 | 15 | | 9 | NEW YORK |
| NORTH CAROLINA | 65,311 | 43,890 | 20,359 | 23,531 | 21,421 | 17,846 | 2,689 | 237 | 261 | 104 | 25 | 237 | 32 | | | | NORTH CAROLINA |
| NORTH DAKOTA | 100,572 | 100,033 | 51,005 | 39,028 | 539 | | 538 | | | | | | | | | | NORTH DAKOTA |
| OHIO | 73,872 | 41,102 | 30,182 | 10,920 | 32,770 | 197 | 23,313 | 5,439 | 1,828 | 50 | 70 | 571 | 299 | | 3 | | OHIO |
| OKLAHOMA | 115,685 | 115,338 | 86,195 | 29,144 | 1,346 | 222 | 1,009 | 2 | 11 | 8 | 6 | 88 | | | | | OKLAHOMA |
| OREGON | 47,274 | 38,918 | 33,551 | 6,366 | 8,368 | 234 | 5,515 | 1,050 | 10 | | 379 | 142 | | | 28 | | OREGON |
| PENNSYLVANIA | 79,140 | 64,075 | 836 | 63,239 | 15,066 | | 11,387 | 1,763 | 483 | 67 | 421 | 520 | 413 | | 3 | 8 | PENNSYLVANIA |
| RHODE ISLAND | 1,847 | 1,223 | 466 | 758 | 424 | | 228 | 92 | 72 | 5 | 21 | 3 | | | | 3 | RHODE ISLAND |
| SOUTH CAROLINA | 50,935 | 42,331 | 40,509 | 1,822 | 8,605 | 8,351 | 183 | | | | | 45 | 12 | | | 3 | SOUTH CAROLINA |
| SOUTH DAKOTA | 112,817 | 111,775 | 75,800 | 36,976 | 1,042 | 21 | 930 | | | 81 | | | | | | | SOUTH DAKOTA |
| TENNESSEE | 59,153 | 61,471 | 47,411 | 4,060 | 7,682 | 234 | 4,178 | 3,178 | 20 | 5 | 7 | 59 | | | 1 | | TENNESSEE |
| TEXAS | 169,836 | 155,415 | 84,638 | 71,777 | 13,421 | 2,835 | 10,080 | 467 | 40 | 26 | 20 | 153 | | | | | TEXAS |
| UTAH | 19,930 | 18,520 | 15,018 | 3,502 | 1,410 | 25 | 1,300 | | 10 | | 33 | 42 | | | | | UTAH |
| VERMONT | 10,574 | 9,223 | 5,864 | 3,359 | 1,351 | 143 | 1,204 | | 1 | 3 | | | | | | | VERMONT |
| VIRGINIA | 54,487 | 47,784 | 41,846 | 5,838 | 6,703 | 3,590 | 1,516 | 1,198 | 284 | 3 | | 112 | | | | | VIRGINIA |
| WASHINGTON | 43,446 | 29,570 | 18,121 | 11,449 | 13,876 | 902 | 10,271 | 1,555 | 44 | 35 | 171 | 755 | 42 | | | | WASHINGTON |
| WEST VIRGINIA | 31,015 | 29,710 | 27,602 | 2,108 | 1,306 | | 520 | 164 | 344 | 4 | 34 | 188 | 49 | | | 2 | WEST VIRGINIA |
| WISCONSIN | 69,111 | 54,105 | 49,093 | 6,012 | 15,005 | 2,769 | 11,395 | 634 | | | | 208 | | | | | WISCONSIN |
| WYOMING | 41,885 | 41,530 | 39,712 | 1,818 | 355 | 97 | 258 | | | | | | | | | | WYOMING |
| TOTALS | 2,712,262 | 2,325,267 | 1,728,454 | 598,803 | 387,005 | 69,711 | 246,524 | 42,732 | 11,651 | 1,548 | 3,607 | 10,405 | 1,384 | 319 | 37 | 87 | TOTALS |

Note: State highway systems are expanded by adding mileage of rural road. City limits are also extended, thus causing a decrease in rural mileage.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

M-2(1926)
R.S.A.

# MILES OF COUNTY AND OTHER RURAL ROADS BUILT TO GRADE, SURFACED, AND RESURFACED, DURING 1926

THESE ROADS ARE EXCLUDED FROM REPORTS OF STATE HIGHWAY SYSTEM. THE DATA SHOWN IN THIS REPORT WERE SECURED FROM EACH COUNTY OF EACH STATE, AND MAY BE COMPARED WITH RESULTS OF THE SURVEY MADE IN 1921 UNDER SIMILAR CONDITIONS. THE REPORTS PUBLISHED FOR 1922, 1923, 1924 AND 1925 WERE PREPARED FROM GENERAL INFORMATION CONTAINING SOME ESTIMATES AND ARE NOT COMPARABLE AS TO EXACT DETAILS WITH THE REPORTS FOR 1921 AND 1926.

(COMPILED FROM RECORDS AND REPORTS OF LOCAL HIGHWAY AUTHORITIES)

| STATES | TOTAL OF MILES GRADED AND DRAINED, AND MILES SURFACED | EARTH IMPROVED GRADED AND DRAINED | TOTAL MILES SURFACED | SAND-CLAY AND TOP SOIL | GRAVEL ETC. TREATED AND UNTREATED | WATERBOUND MACADAM | BITUMINOUS MACADAM BY PENETRATION | SHEET ASPHALT | BITUMINOUS CONCRETE | PORTLAND CEMENT CONCRETE | VITRIFIED BRICK | BLOCK ASPHALT, WOOD, STONE | STATES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALABAMA | 2,493.9 | 1,329.0 | 1,164.9 | 646.0 | 480.4 | 32.0 | -- | -- | -- | 6.5 | -- | -- | ALABAMA |
| ARIZONA | 235.8 | 155.0 | 80.8 | -- | 80.5 | -- | -- | -- | 0.3 | -- | -- | -- | ARIZONA |
| ARKANSAS | 3,224.5 | 2,922.0 | 302.5 | -- | 302.5 | -- | -- | -- | -- | -- | -- | -- | ARKANSAS |
| CALIFORNIA | 1,163.4 | 257.8 | 905.6 | 50.0 | 461.1 | 66.6 | 132.5 | 8.6 | 100.9 | 85.9 | -- | -- | CALIFORNIA |
| COLORADO | 803.7 | 551.3 | 252.4 | 68.9 | 183.5 | -- | -- | -- | -- | -- | -- | -- | COLORADO |
| CONNECTICUT | 101.3 | 25.0 | 76.3 | -- | 54.5 | 8.0 | 9.0 | 0.5 | -- | 4.3 | -- | -- | CONNECTICUT |
| DELAWARE | 12.0 | -- | 12.0 | -- | 3.0 | 4.2 | 0.3 | -- | 4.0 | 0.5 | -- | -- | DELAWARE |
| FLORIDA | 2,687.5 | 505.0 | 2,182.5 | 355.9 | 112.5 | 1,380.2 | 75.7 | 133.0 | 3.0 | 46.0 | 10.7 | 65.5 | FLORIDA |
| GEORGIA | 1,670.6 | 764.1 | 906.5 | 751.5 | 54.5 | -- | 89.0 | -- | -- | 11.5 | -- | -- | GEORGIA |
| IDAHO | 752.3 | 354.0 | 398.3 | 42.1 | 351.0 | -- | 1.0 | -- | 4.2 | -- | -- | -- | IDAHO |
| ILLINOIS | 773.3 | 41.0 | 732.3 | -- | 626.1 | 11.0 | 2.2 | -- | 2.5 | 90.0 | 0.5 | -- | ILLINOIS |
| INDIANA | 943.0 | 3.6 | 939.4 | -- | 678.3 | 63.2 | 18.5 | 13.1 | 10.6 | 153.4 | 2.3 | -- | INDIANA |
| IOWA | 1,906.5 | 375.3 | 1,531.3 | -- | 1,531.3 | -- | -- | -- | -- | -- | -- | -- | IOWA |
| KANSAS | 1,374.3 | 1,174.3 | 200.0 | 122.0 | 51.5 | 10.6 | 2.2 | 2.9 | -- | 10.9 | -- | -- | KANSAS |
| KENTUCKY | 585.1 | 95.1 | 490.0 | 4.0 | 225.4 | 254.0 | 4.0 | 1.8 | -- | 0.8 | -- | -- | KENTUCKY |
| LOUISIANA | 1,804.9 | 763.0 | 1,041.9 | 26.0 | 998.9 | 12.0 | 5.0 | -- | -- | -- | -- | -- | LOUISIANA |
| MAINE | 51.9 | 0.2 | 51.7 | -- | 50.5 | 0.3 | 0.9 | -- | -- | -- | -- | -- | MAINE |
| MARYLAND | 198.4 | 10.5 | 187.8 | -- | 90.9 | 76.3 | 5.1 | 0.5 | -- | 15.0 | -- | -- | MARYLAND |
| MASSACHUSETTS | 151.9 | 18.1 | 133.9 | 0.2 | 89.4 | 2.4 | 30.0 | -- | 11.7 | -- | 0.1 | -- | MASSACHUSETTS |
| MICHIGAN | 1,053.6 | 67.1 | 986.5 | 0.4 | 742.3 | 68.6 | 19.1 | 2.5 | 5.7 | 147.9 | -- | -- | MICHIGAN |
| MINNESOTA | 8,966.4 | 5,338.0 | 3,628.4 | 712.7 | 2,906.7 | -- | -- | -- | 0.2 | 8.8 | -- | -- | MINNESOTA |
| MISSISSIPPI | 1,680.7 | 357.0 | 1,323.7 | 25.0 | 1,231.9 | -- | 16.3 | 7.0 | 40.5 | -- | 3.0 | -- | MISSISSIPPI |
| MISSOURI | 844.9 | 717.8 | 127.1 | -- | 99.0 | 20.5 | 0.8 | -- | -- | 6.8 | -- | -- | MISSOURI |
| MONTANA | 4,291.1 | 3,956.7 | 334.4 | 91.0 | 243.4 | -- | -- | -- | -- | -- | -- | -- | MONTANA |
| NEBRASKA | 3,175.6 | 2,854.6 | 321.0 | 40.0 | 274.0 | -- | -- | -- | 1.0 | 6.0 | -- | -- | NEBRASKA |
| NEVADA | 173.7 | 136.0 | 37.7 | 37.7 | -- | -- | -- | -- | -- | -- | -- | -- | NEVADA |
| NEW HAMPSHIRE | 27.8 | 1.9 | 25.9 | 1.1 | 24.3 | 0.3 | 0.2 | -- | -- | -- | -- | -- | NEW HAMPSHIRE |
| NEW JERSEY | 503.1 | 8.5 | 494.5 | 17.5 | 139.9 | 187.0 | 37.1 | 17.6 | 30.0 | 65.0 | -- | 0.4 | NEW JERSEY |
| NEW MEXICO | 88.0 | 69.0 | 19.0 | 8.0 | 11.0 | -- | -- | -- | -- | -- | -- | -- | NEW MEXICO |
| NEW YORK | 2,161.3 | 333.7 | 1,827.6 | 7.6 | 552.9 | 484.5 | 597.0 | 17.4 | 20.8 | 121.1 | 0.7 | 25.5 | NEW YORK |
| NORTH CAROLINA | 2,173.0 | 429.9 | 1,743.1 | 1,339.1 | 268.4 | 29.0 | 24.9 | 25.0 | -- | 56.9 | -- | -- | NORTH CAROLINA |
| NORTH DAKOTA | 1,115.3 | 994.1 | 121.2 | -- | 121.2 | -- | -- | -- | -- | -- | -- | -- | NORTH DAKOTA |
| OHIO | 3,786.9 | 997.9 | 2,789.0 | 6.0 | 1,871.0 | 609.6 | 195.6 | 19.9 | 3.5 | 71.3 | 12.2 | -- | OHIO |
| OKLAHOMA | 6,263.7 | 5,971.0 | 292.7 | 37.2 | 225.5 | 1.5 | 9.5 | 5.0 | -- | 14.0 | -- | -- | OKLAHOMA |
| OREGON | 936.5 | 331.1 | 605.4 | 19.0 | 335.0 | 177.4 | 8.7 | -- | 47.9 | 17.4 | -- | -- | OREGON |
| PENNSYLVANIA | 893.8 | 119.8 | 774.0 | -- | 472.3 | 116.2 | 48.0 | 3.5 | 70.7 | 56.4 | 6.9 | -- | PENNSYLVANIA |
| RHODE ISLAND | 34.1 | -- | 34.1 | -- | 15.9 | 14.5 | 2.6 | -- | 1.1 | -- | -- | -- | RHODE ISLAND |
| SOUTH CAROLINA | 1,284.8 | 174.0 | 1,110.8 | 1,060.6 | 50.2 | -- | -- | -- | -- | -- | -- | -- | SOUTH CAROLINA |
| SOUTH DAKOTA | 5,494.4 | 5,238.5 | 255.9 | 6.5 | 223.4 | -- | -- | 26.0 | -- | -- | -- | -- | SOUTH DAKOTA |
| TENNESSEE | 1,024.6 | 384.1 | 640.5 | 60.0 | 292.2 | 261.8 | 7.6 | -- | 1.5 | 17.4 | -- | -- | TENNESSEE |
| TEXAS | 10,848.7 | 8,623.8 | 2,224.9 | 653.8 | 1,490.3 | 41.8 | 13.0 | 8.0 | -- | 18.2 | -- | -- | TEXAS |
| UTAH | 704.8 | 490.2 | 214.6 | 15.0 | 197.3 | -- | -- | -- | 2.3 | -- | -- | -- | UTAH |
| VERMONT | 162.4 | 46.1 | 116.3 | 7.0 | 109.2 | -- | -- | -- | -- | 0.1 | -- | -- | VERMONT |
| VIRGINIA | 914.8 | 392.2 | 522.6 | 169.6 | 125.2 | 156.0 | 55.2 | -- | -- | 16.6 | -- | -- | VIRGINIA |
| WASHINGTON | 1,231.1 | 257.5 | 973.6 | 39.4 | 680.7 | 236.0 | -- | -- | 0.6 | 16.9 | -- | -- | WASHINGTON |
| WEST VIRGINIA | 637.1 | 313.4 | 323.7 | -- | 84.8 | 40.0 | 157.9 | 0.5 | 22.3 | 16.2 | -- | 2.0 | WEST VIRGINIA |
| WISCONSIN | 7,093.7 | 4,542.5 | 2,551.2 | 535.5 | 1,819.3 | 175.0 | -- | -- | -- | 21.4 | -- | -- | WISCONSIN |
| WYOMING | 525.5 | 508.3 | 17.2 | -- | 17.2 | -- | -- | -- | -- | -- | -- | -- | WYOMING |
| TOTALS | 89,025.8 | 52,999.2 | 36,026.6 | 6,956.3 | 21,050.3 | 4,540.3 | 1,568.8 | 292.6 | 385.3 | 1,103.1 | 36.4 | 93.5 | TOTALS |

# REDDISH-BROWN PRINTS ON WHITE BACKGROUND USED BY MARYLAND STATE ROADS COMMISSION

Compiled from a report submitted
by
Ben. F. Heidel of District 10
(Not for release)

As a substitute for standard blueprints, the Maryland State Roads Commission has for some time past been submitting Federal-aid plans printed on a new kind of paper on which are developed reddish-brown lines or letters on a white background. The process differs from the standard blueprinting method in that the paper used is patented and the prints are developed by exposure to ammonia fumes.

The Maryland State Roads Commission is using two different makes of paper, one called "Ozalid", manufactured in Germany, and distributed in this country by Eugene Dietzgen and Co., and the other known under the trade name of "Primulin" which is produced in the United States and distributed by the New York Blueprint Paper Company. The manufacturers claim the following advantages for the utility of the paper:

1.- There is no distortion of the print due to washing and drying.

2.- The prints do not fade when exposed to the sunlight.

3.- The prints are not faded by perspiration.

4.- Readily legible field notes may be made on the prints with either a pencil or a pen.

5.- Where the basic data for a series of studies are plotted on a tracing, the studies may be completed on a print, and the accepted study traced upon the original tracing.

6.- Where the prints are made on thin paper, each may be used as a tracing to make other prints, since each has the properties of a tracing made on tracing paper.

7.- The prints, like tracings, may be photographed.

The manufacturers also allege the superiority of the paper for printing by the following arguments:

1.- The paper prints at the same rate of speed as standard blueprint paper, and then is developed by exposure to ammonia fumes for a few moments; hence the usual delay of washing and drying in water is eliminated.

2.- The prints may be made one day and developed the next day without being stored, in the intervening time, in a dark room. According to the method used by the Maryland State Roads Commission, the operator first makes all the prints and subsequently the same operator accomplishes the developing.

3.- It is a simple matter to block out information on a tracing not desired on the print or to insert data not shown on the original tracing.

4.- Where new printing equipment is to be installed, the cost of the ammonia-treatment chamber is appreciably less than a standard blueprint washing-and-drying machine.

The Maryland State Roads Commission has not made a comparison of the total difference in cost resulting from the use of the patented paper as compared with the standard blueprint paper. A roll of 50 yards of Ozalid or Primulin paper, 36 inches wide, costs the State approximately $1.00 more per roll than blueprint paper. An appreciable saving, however, is made in the number of prints sent to the field because the new prints do not fade and, under ordinary conditions, less prints are required for a project. No attempt has been made, however, to compare accurately the cost of the new process with similar work accomplished with a blueprinting plant.

Many of the prints made by the new process, as submitted to the Bureau on Federal-aid projects, are of inferior quality. It does not seem fair, however, to attribute this inferiority to the paper or the process. The routine printing of the Maryland State Roads Commission is in the hands of messenger boys who have no knowledge or appreciation of the purposes which the prints are intended to serve. The boys do not sense

THE NEED OF A UNIFORM LIGHT ALONG THE GLASS BARREL OF THE PRINTING MACHINE. CONSEQUENTLY THE BUREAU RECEIVED PRINTS WITH BLURRED STREAKS EXTENDING THE FULL LENGTH OF SEVERAL SHEETS, SIMPLY BECAUSE SOME BOY, NOT KNOWING HOW TO CORRECT THE TROUBLE, ALLOWED AN ARC LIGHT TO BURN DIMLY. THE STATE AUTHORITIES, HOWEVER, HAVE, IN THEIR OFFICE FILES, PRINTS MADE BY THEIR ENGINEERS FOR SPECIAL STUDIES, WHICH ARE AS CLEAR AS ANY BLUEPRINT COULD BE MADE FROM THE SAME TRACING. THE BUREAU HAS ALSO RECEIVED A NUMBER OF EXCELLENT PRINTS.

## A.A.S.H.O. COMMITTEE ON MATERIALS HOLD MEETING ON JUNE 25-26, 1928.

(NOT FOR RELEASE)

THE REGULAR ANNUAL MEETING OF THE COMMITTEE ON MATERIALS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, HELD AT THE HEADQUARTERS OFFICE OF THE BUREAU ON MONDAY AND TUESDAY, JUNE 25 AND 26, 1928, WHEN CALLED TO ORDER BY THE CHAIRMAN - H. S. MATTIMORE OF PENNSYLVANIA - MUSTERED REPRESENTATIVES FROM 17 STATES.

REPORTS OF OUTSTANDING INTEREST WERE PRESENTED BY A NUMBER OF THE SECTIONAL RESEARCH COMMITTEES. MR. REAGEL OF MISSOURI SUBMITTED REPORTS DEALING WITH THE STANDARDIZATION OF METHODS FOR MAKING TRANSVERSE TESTS OF CONCRETE, AND ON METHODS FOR THE DEHYDRATION OF ROCK ASPHALTS. MR. REA OF OHIO GAVE A DETAILED DESCRIPTION OF A PROPOSED SPECIFICATION FOR GRAVEL FOR CONCRETE PAVEMENTS. MR. ULMAN OF PENNSYLVANIA DISCUSSED THE RECOVERY OF BITUMEN EXTRACTED FROM BITUMINOUS MATERIALS, AND MR. MILBURN OF THE BUREAU OUTLINED METHODS FOR THE DETERMINATION OF THE TOUGHNESS OF BITUMINOUS AGGREGATES. A REPORT WAS ALSO RECEIVED GIVING THE RESULTS OF THE WORK, OF A JOINT COMMITTEE OF THE A.A.S.H.O. AND THE A.S.T.M., ON METHODS OF DISTILLATION.

SUBCOMMITTEES WERE APPOINTED TO STUDY THE EQUIPMENT USED IN THE WEIGHING OF CONCRETE AGGREGATES, AND TO FORMULATE A RECOMMENDED PRACTICE GOVERNING THE DESIGN AND USE OF SUCH EQUIPMENT; AND TO MAKE A FULL INVESTIGATION OF ABRASION TESTS FOR AGGREGATES, WITH SPECIAL REFERENCE TO THE RELATION BETWEEN THE PERCENTAGE OF LOSS AND THE STRENGTH OF CONCRETE; TOGETHER WITH A STUDY OF THE VARIOUS PROPOSED TESTS TO DETERMINE THE PERCENTAGE OF SOFT PIECES IN GRAVEL.

The committee voted to change certain requirements for percentage of wear in the various association specifications for blast-furnace slag. In all cases where the existing specifications call for a percentage of wear of 12, the committee voted to recommend that the percentage of wear be changed to 15.

## MODEL ANALYSIS OF YADKIN RIVER BRIDGE COMPLETED

Contributed by

A. L. Gemeny of the Division of Tests

(Not for release)

A complete model analysis of the Yadkin River Federal-aid bridge between Albemarle and Mt. Gilead, N. C., has just been finished as a cooperative project of the Bureau and Johns Hopkins University represented by Prof. J. T. Thompson. The analysis was made by means of the Beggs deformeter gauges and a celluloid model. The results, which are now being compiled, will be included in the report of the Yadkin River Bridge test.

In designing an open spandrel rib arch of the type of the Yadkin River bridge, it is usually assumed that the action of the rib is unaffected by the superstructure. Obviously, this is not the case but a mathematical analysis of the complete arch, including the superstructure, is so complex as to be impracticable for the purposes of design. A comparison of results from the model analysis and the measured results obtained by loading the bridge itself will indicate to what extent the action of a model made of a uniform, elastic material such as celluloid may be taken as representing the action of a reinforced concrete structure built of a non-uniformly elastic material such as concrete. It is hoped that the complete Yadkin River bridge report will be ready for publication at an early date.

# FACILITIES OF STATE HIGHWAY TESTING LABORATORIES
## 1928

| STATE | LABORATORY | | | | | MATERIALS | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOCATION | IN CHARGE | DATE ESTABLISHED | APPROX. NO. EMPLOYEES 1927 | APPROX. NO. TESTS 1927 | BITUMINOUS MATERIALS | BITUMINOUS MIXTURES | PAVING BRICK | CEMENT | CONCRETE | CULVERT PIPE COR. METAL | CULVERT PIPE CONC. ETC. | DRAIN TILE | GRAVEL | PAINT | ROCK | SAND | SAND CLAY TOP SOIL | SLAG | STEEL |
| ALABAMA | MONTGOMERY | R. S. HALE | | 8 | 1435 | ● | ● | ○ | ● | ● | ◐ | ◐ | ○ | ● | ◐ | ● | ● | ● | ● | ● |
| ARKANSAS | FAYETTEVILLE | W. R. SPENCER | 1924 | | | ● | ● | ● | ● | ● | ○ | ● | ● | ● | ○ | ● | ● | ◐ | ● | ● |
| ARIZONA | PHOENIX | J. W. POWERS | 1921 | 3 | 1067 | ● | ● | ○ | ● | ● | ● | ○ | ○ | ● | ● | ● | ● | ● | ● | ● |
| CALIFORNIA | SACRAMENTO | | 1912 | 20 | 8079 | ● | ● | ○ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| COLORADO | COM'L. & UNIV. LABS. | | | | | | | | | | | | | | | | | | | |
| CONNECTICUT† | PORTLAND | F. G. FLOOD | 1925 | 5 | 3000 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ● | ● |
| DELAWARE | DOVER | F. S. PRITCHETT | 1917 | 3 | 267 | ◐ | ◐ | ● | ● | ● | ◐ | ◐ | ○ | ● | ◐ | ● | ● | ● | ● | ● |
| FLORIDA | GAINESVILLE | H. A. HALL | 1917 | 7 | 5197 | ● | ● | ● | ● | ● | ● | ○ | ○ | ● | ● | ● | ● | ● | ● | ● |
| GEORGIA | EAST POINT | J. E. BOYD | 1924 | 8 | 9458 | ● | ● | ○ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| IDAHO | BOISE | R. HARSCH | 1919 | 3 | 1117 | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ● |
| ILLINOIS | SPRINGFIELD | V. L. GLOVER | 1911 | 128 | 45482 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| INDIANA | INDIANAPOLIS | P. D. MIESENHELDER | 1921 | | | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| IOWA | AMES | BERT MYERS | 1919 | 41 | 22611 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| KANSAS | MANHATTAN | C. H. SCHOLER | 1917 | 22 | 5000 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| KENTUCKY | LEXINGTON | D. V. TERRELL | 1915 | 6 | 7500 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ | ● | ● |
| LOUISIANA | BATON ROUGE | J. H. BATEMAN | 1925 | 7 | 2477 | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ● |
| MAINE | ORONO | H. W. LEAVITT | 1914 | 4 | 934 | ◐ | ○ | ○ | ● | ● | ● | ◐ | ◐ | ● | ○ | ● | ● | ◐ | ○ | ● |
| MARYLAND | BALTIMORE | F. C. ROSSELL | 1916 | | | ● | ● | ○ | ● | ● | ◐ | ○ | ○ | ● | ● | ● | ● | ● | ● | ○ |
| MASSACHUSETTS | BOSTON | A. V. BRATT | 1921 | 5 | 1737 | ● | ● | ○ | ● | ● | ◐ | ◐ | ● | ● | ● | ● | ● | ◐ | ○ | ● |
| MICHIGAN | ANN ARBOR | W. J. EMMONS | 1913 | 17 | 10818 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ◐ |
| MINNESOTA | MINNEAPOLIS | F. C. LANG | 1919 | 14 | 4411 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| MISSISSIPPI | COM'L. LABORATORIES | | | | | | | | | | | | | | | | | | | |
| MISSOURI | JEFFERSON CITY | F. V. REAGEL | 1923 | 14 | 9516 | ● | ● | ○ | ● | ● | ● | ◐ | ◐ | ● | ● | ● | ● | ● | ● | ● |
| MONTANA | HELENA | S. MASON | 1919 | 2 | 756 | ● | ● | ○ | ◐ | ◐ | ◐ | ◐ | ○ | ● | ◐ | ● | ● | ◐ | ● | ◐ |
| NEBRASKA | LINCOLN | C. M. DUFF | 1900 | 8 | 4636 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| NEVADA | CARSON CITY | F. H. MORRISON | 1918 | 2 | 844 | ● | ● | ○ | ● | ● | ● | ○ | ○ | ● | ● | ● | ● | ● | ● | ● |
| NEW HAMPSHIRE | CONCORD | W. F. PURRINGTON | 1917 | 2 | 2000 | ● | ● | ○ | ● | ● | ◐ | ● | ◐ | ● | ● | ● | ● | ● | ● | ◐ |
| NEW JERSEY | TRENTON | R. B. GAGE | 1909 | 45 TO 60 | 13067 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| NEW MEXICO | LAS CRUCES | L. C. CAMPBELL | 1924 | 3 | 661 | ● | ● | ◐ | ● | ● | ● | ◐ | ◐ | ● | ○ | ● | ● | ● | ● | ● |
| NEW YORK | ALBANY | W. M. ACHESON | 1909 | 20 | 14849 | ● | ● | ○ | ● | ● | ◐ | ◐ | ● | ● | ● | ● | ● | ○ | ● | ● |
| NORTH CAROLINA | RALEIGH | E. H. KIVETT<br>W. A. HARRIS | 1921 | 13 | 8600 | ● | ● | ○ | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ● |
| NORTH DAKOTA | BISMARK | H. G. GROVES | 1923 | 3 | 1751 | ○ | ○ | ○ | ● | ● | ● | ● | ● | ● | ○ | ● | ● | ● | ○ | ○ |
| OHIO | COLUMBUS | A. S. REA | 1909 | 12 | 15000 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| OKLAHOMA | OKLAHOMA CITY | D. WOOD | 1924 | 12 | 2190 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| OREGON | SALEM | N. M. FINKBINER | 1919 | 4 | 2545 | ● | ● | ○ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ○ | ○ | ○ |
| PENNSYLVANIA | HARRISBURG | H. S. MATTIMORE | 1914 | 31 | 25738 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| RHODE ISLAND | PROVIDENCE | J. V. KEILY | 1922 | 3 | 8600 | ● | ● | ○ | ● | ● | ◐ | ○ | ○ | ● | ◐ | ● | ● | ● | ○ | ● |
| SOUTH CAROLINA | COLUMBIA | W. H. MILLS, JR. | 1923 | 8 | 2580 | ● | ● | ◐ | ● | ● | ◐ | ● | ◐ | ● | ● | ● | ● | ● | ● | ● |
| SOUTH DAKOTA | PIERRE | C. J. LOOMER | 1921 | 2 | 433 | ○ | ○ | ○ | ● | ○ | ● | ● | ● | ● | ○ | ◐ | ● | ● | ○ | ○ |
| TENNESSEE | NASHVILLE | D. D. McGUIRE | 1920 | 13 | 6662 | ● | ● | ○ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| TEXAS | AUSTIN | H. T. BREWSTER | 1914 | 6 | 6781 | ● | ◐ | ◐ | ● | ● | ◐ | ● | ● | ● | ○ | ● | ● | ● | ● | ● |
| UTAH | SALT LAKE CITY | L. MUIR | 1919 | | | ● | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| VERMONT | MONTPELIER | R. I. ROWELL | 1925 | 3 | 1443 | ● | ● | ○ | ● | ● | ○ | ◐ | ◐ | ● | ● | ● | ● | ◐ | ● | ● |
| VIRGINIA | RICHMOND | S. CLARK | 1920 | 9 | 5750 | ● | ● | ◐ | ● | ● | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ● |
| WASHINGTON | OLYMPIA | B. TREMPER | 1921 | 3 | 3500 | ● | ● | ◐ | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| WEST VIRGINIA | MORGANTOWN | R. B. DAYTON | 1919 | 10 | 4675 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ◐ | ● | ● |
| WISCONSIN | MADISON | C. R. STOKES | 1925 | 6 | 6898 | ● | ● | ○ | ● | ● | ● | ◐ | ◐ | ● | ● | ● | ● | ● | ● | ● |
| WYOMING | CHEYENNE | W. A. NORRIS | 1919 | 2 | 1025 | ● | ● | ◐ | ● | ● | ● | ◐ | ◐ | ● | ○ | ● | ● | ● | ● | ● |

LEGEND: LABORATORY NOT EQUIPPED= ○ PARTIALLY EQUIPPED= ◐ FULLY EQUIPPED= ●

## MOUNT VERNON MEMORIAL BOULEVARD SURVEY BEGUN ON JUNE 15

(Not for release)

On June 15, 1928, the survey to determine the location of the Mount Vernon memorial boulevard was begun by the Bureau under the immediate direction of the Division of Design. Messrs. D. T. Brown and C. S. Jarvis of this division are in charge of the field and office work, respectively. When the surveys and plans are completed, they will be submitted to the Commission for the Celebration of the Two Hundredth Anniversary of the Birth of George Washington for the final determination of the route and the approval of the character of the proposed construction. The chairman of this commission is the President of the United States and the vice chairman is Senator Simeon D. Fess of Ohio. It is hoped that the construction of some of the hydraulic fills may be begun this fall so that the entire project may be completed by January 1, 1932, in time to accommodate the large crowds which are expected to visit the home and tomb of George Washington, at the bi-centennial of his birth.

This memorial highway, the authorized appropriation for which totals $4,500,000, is the most important road project ever entrusted to the Bureau in the vicinity of the National Capitol. It will begin at the Virginia side of the Arlington memorial bridge over the Potomac River at Washington and extend for a distance of 12 to 15 miles, depending upon the route selected, to Mount Vernon, where there is situated the estate and final resting place of our first and greatest President. The previous investigations of the Bureau indicate that the river route is the best one for monumental purposes, principally because of the scenic advantages. The general nature of the development was suggested by Mr. MacDonald during the hearings before the House Committee on Roads of the Seventieth Congress, when he stated ". . . . . . And it is my conception that this boulevard could be made an extension of the Rock Creek Park and Potomac Park developments, extending clear from the Maryland line through Rock Creek Park, through Potomac Park, and along the river to Mount Vernon. It would be one of the most beautifull drives in the whole world; and my conception of its development would be to have it with proper construction, but with the planning and the rather simple development that has been

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

so successful in Rock Creek Park.

"It is not my conception of Washington's character that he would have cared to have a road leading to his tomb, as they built roads from Rome leading to the Appian Way, where there seemed to be a great effort on the part of each one to outdo the others in building the most magnificent tombs and approaches.

"I think the simple treatment of Rock Creek Park would meet more nearly the requirements of the situation."

In his report to Mr. MacDonald, comparing the estimated costs of the inland with the river route, the recommendation for which has been concurred in by the Secretary of War, and is warmly endorsed by the Commission on Fine Arts, and the National Capitol Park and Planning Commission; Captain P. St. J. Wilson outlined the advantages of the river route, over all other routes, with respect to its scenic possibilities and its historical associations, as follows: " . . . . . About halfway between Washington and Alexandria, this route passes close to Abington, the home of John Custis, Mrs. Washington's son, which still stands overlooking the river. Here Nellie Custis, Washington's adopted daughter, was born. A beautiful view of the river and a panorama of Washington and the north shore are obtainable from this point.

"Passing on to Alexandria, this route enters the city by Washington Street and passes directly by Christ Church, where the Washington pew may still be seen. This church was visited by 154,318 people in 1926, in addition to those attending services. One of the outstanding points of superiority favoring the choice of this route is that it passes directly through Alexandria instead of around it.

"Alexandria was Washington's own town. It was his market place, his post office, and his voting place. It was the meeting place of the lodge of Masons to which he belonged, and the lodge hall is now the repository of a great many articles and paintings associated with him.

"The trowel, square, and plumb bob used in laying the cornerstone of the Capitol may be seen here; and, also the Bible that was used in the days of Washington. Here also is

an original painting of Washington by Gilbert Stuart, the Pope Peale painting of him in early life, and many other paintings and interesting relics too numerous to mention. There were 93,484 visitors to this shrine in 1926.

"There is scarcely a foot of ground in Alexandria that Washington did not tread. The old quarters of the volunteer fire company, of which Washington was a member, still stand. In Gadsby's Inn, now the City Hotel, he recruited his first company of provincial troops authorized by Governor Dinwiddie, with which he fought the Battle of Great Meadows.

"In the ball room of the City Hotel, in 1798, was held the first celebration of Washington's birthday. From the steps of the same building he gave his last military command to the Alexandria Light Infantry Blues, his bodyguard during the Revolution; and here, also in November, 1799, less than 30 days before his death, he cast his last vote.

"At the Carlyle House, still standing, he received his appointment as major in the British Army on General Braddock's staff; and in this house, also, at the convention of the five governors assembled to confer with General Braddock, the first suggestion of colonial taxation was made, the step which ultimately led to the revolt of the Colonies.

"Other places of historic interest still standing in the city and intimately associated with the life of Washington are the homes of Dr. James Craik, of Dr. Elisha Cullen Dick, his family physicians, and the homes of Light Horse Harry Lee and of his two famous sons, Robert E. and Sydney Smith Lee.

"A short side trip from Washington Street down King Street takes the traveler to the George Washington National Masonic Memorial which is being erected at the western outskirts of the town on Shooters' Hill.

"Returning to Washington Street and proceeding southward, the traveler soon reaches the southern limits of the town and passes within a stone's throw of the first cornerstone of the District of Columbia, still standing on Jones Point with the inscription still complete.

"Leaving Alexandria, the river route crosses Hunting Creek and rises to high ground from which a broad panorama of the river and distant Washington are spread before the eye; and then, overlooking the river, it follows the ridge to old Fort Hunt, and thence to the postern gates of Mount Vernon."

## JOHN WESLEY BALL

(NOT FOR RELEASE)

JOHN WESLEY BALL, SENIOR HIGHWAY ENGINEER OF THE REGIONAL OFFICE, ENGAGED IN THE ADMINISTRATION OF NATIONAL FOREST ROAD WORK IN THE ELEVEN WESTERN STATES, DIED ON JULY 22 IN SAN FRANCISCO, FOLLOWING AN ILLNESS OF THREE WEEKS THAT DEVELOPED FROM A COLD AND INVOLVED SOME INFLAMMATORY RHEUMATIC CONDITIONS AFFECTING THE HEART. HE WAS ON THE WAY TO RECOVERY WHEN THE FATAL HEART ATTACK OCCURRED.

THE COLD IS BELIEVED TO HAVE BEEN CONTRACTED WHILE HE WAS ON A TRIP TO GIBBONSVILLE, LOCATED ON THE FOREST HIGHWAY SECTION OF THE SAWTOOTH PARK HIGHWAY, BETWEEN SALMON, IDAHO AND THE MONTANA STATE BOUNDARY ON THE CONTINENTAL DIVIDE. RETURNING TO SAN FRANCISCO, HE WENT BACK TO HIS WORK IN THE OFFICE ON JUNE 11, AND REMAINED THERE FOR A NUMBER OF DAYS, APPARENTLY RECOVERING FROM HIS COLD. HOWEVER, ON JUNE 22, HE FELT SO BADLY THAT IT WAS NECESSARY FOR HIM TO GO HOME TO BED ALTHOUGH EVEN THEN HIS FAMILY FELT NO SERIOUS MISGIVINGS CONCERNING HIS CONDITION. ON JULY 15, HIS CONDITION WAS GRAVE BUT HE GREW MUCH BETTER DURING THE FOLLOWING WEEK UNTIL ON SUNDAY MORNING JULY 22, WHEN, CONSIDERED TO BE SURELY ON THE MEND, HE SUDDENLY COLLAPSED.

BESIDES HIS WIDOW, RUTH, HE LEAVES TWO YOUND CHILDREN - ELIZABETH ANN, AGE THREE, AND JOHN WESLEY, JUNIOR, AGE 10 MONTHS. THE FUNERAL WAS HELD ON JULY 25 UNDER THE AUSPICES OF THE MASONIC ORDER.

MR. BALL WAS BORN ON AUGUST 8, 1888, AT WALTON, IND., AND WAS GRADUATED FROM THE GALVESTON, IND., HIGH SCHOOL IN 1908. AFTER 3 TERMS OF SCHOOLING IN THE INDIANA STATE NORMAL SCHOOL, HE ENTERED PURDUE UNIVERSITY AND RECEIVED A B.S.C.E. DEGREE, IN 1914, AND LATER A C.E. DEGREE FROM THE SAME INSTITUTION. AFTER SOME PRELIMINARY ENGINEERING EXPERIENCE, HE ENTERED THE HEADQUARTERS OFFICE OF THE BUREAU ON APRIL 22, 1914, AS A CIVIL ENGINEER STUDENT. HE WAS ASSIGNED TO WORK IN THE WESTERN STATES AND HIS FIRST DUTY CONSISTED IN LOCATING ROADS IN THE SEQUOIA AND YOSEMITE NATIONAL PARKS IN CALIFORNIA. FROM JULY, 1915, TO MARCH, 1916, HE WAS LOANED BY THE BUREAU

to Skamania County, Wash., to supervise the location and design of the county highways to be constructed with a local bond issue of $210,000. From March, 1916, to March, 1917, he was in charge of the location and design of the national forest highway, nearly 70 miles in length, between Medford and Crater Lake, Ore. From November, 1917, to February, 1918, he directed the paving operations on the cantonment streets at Camp Lewis, American Lake, Wash. He was in charge of the construction of the Cow Creek section of the Canyonville-Galesville national forest road project on the Pacific Highway in Oregon, from October, 1918, to October, 1919; and following this work until April, 1921, he supervised the construction of the Crescent Lake national forest road, on the Olympic peninsula in the State of Washington.

In April, 1921, Mr. Ball was transferred to the Regional Office where he was engaged, until the time of his death, in the administration of national forest road work in the public-land States, working under the immediate direction of Dr. Hewes. Mr. Ball's record indicates consistent progress in the Bureau as a result of conscientious and faithful service. From the time of his entrance as a student in 1914, he rose regularly through the various engineering grades, until he reached the highest professional status - senior highway engineer.

Mr. Ball was a Phi Beta Kappa, a Sigma Xi, a member of the Mystic Shrine, and a thirty-second degree Mason. His associates in the Bureau sympathize with his family in his untimely end.